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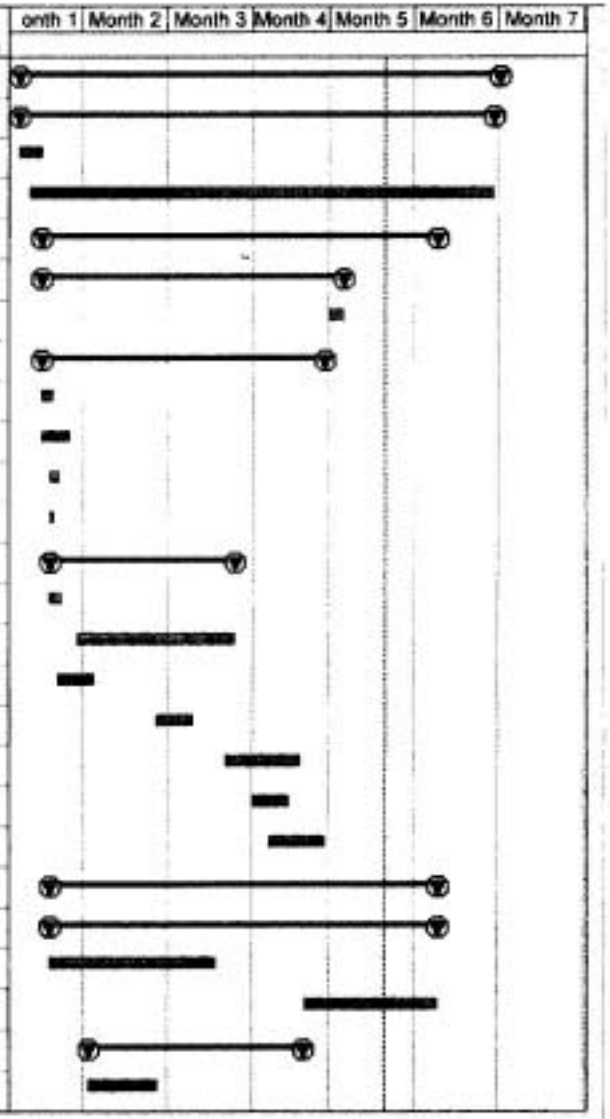
EMR - BUENOS AIRES, ARGENTINA

ID	Item	Duration
1	**EMR - EXTERIOR INFRASTRUCTURE UPGRADING and WATERPROOFING GARDEN WALL**	**128d**
2	**GENERAL REQUIREMENTS**	**123d**
3	Construction Facilities and Temporary Controls	7d
4	Site Cleaning	121d
5	**SITE WORK**	**103d**
6	**Subsurface Investigation & Demolition**	**79d**
7	Standard Penetration and Compaction Tests	4d
8	**Selective Demolition and Temporary Removal**	**74d**
9	Removal of selected stone steps, stone benches and fixtures	3d
10	Removal, protection and transportation of selected trees, shrubs and flowers	7d
11	Partial removal of existing exterior lighting fixtures and electrical fittings	4d
12	Removal of defensive wires attached to the existing decorative grills	2d
13	**Soil removal**	**60d**
14	Gravel : Removal and preservation	5d
15	Poor soil : Removal and disposal	42d
16	Good soil: Removal and preservation	10d
17	Removal of existing membrane and flashing	10d
18	Selective demolition of existing Faux Caen stucco on exterior walls (ascending moisture treatment	20d
19	Selective demolition of damaged stucco	10d
20	Tiles removal on existing sidewalks	15d
21	**Earthwork**	**102d**
22	**Excavation, Backfill and Compactation**	**102d**
23	Excavation	45d
24	Backfill and compaction	35d
25	**Underground Drainage Systems**	**57d**
26	Upgrading of the existing drainage system	20d



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03/2002

Critical — Progress — Summary
Noncritical — Milestone — Rolled Up

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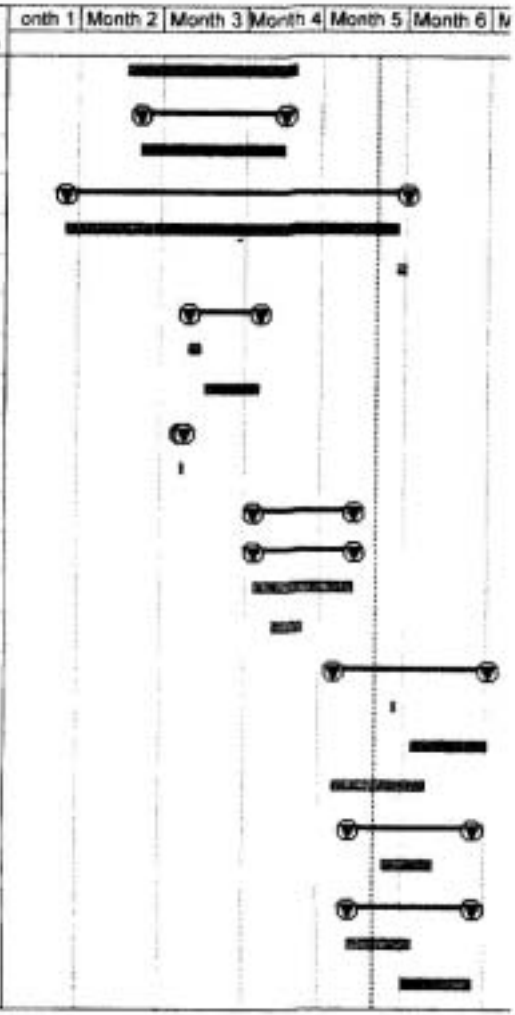
EXTERIOR INFRASTRUCTURE UPGRADING AND WATERPROOFING GARDEN WALL
EMR - BUENOS AIRES, ARGENTINA

ID	Item	Duration
27	Installation of complementary drainage pipes and fittings	45d
28	**Irrigation system**	40d
29	Adapting the existing system	40d
30	**Landscaping**	91d
31	Temporary care and transplanting of selected trees, shrubs and flowers	90d
32	Reposition of gravel	2d
33	**MASONRY**	19d
34	Reinforcement of existing masonry	3d
35	Application of new stucco to receive the waterproofing membrane	15d
36	**METALS**	2d
37	Verification of existing tension bars	2d
38	**THERMAL AND MOISTURE PROTECTION**	28d
39	**Waterproofing & dampproofing**	28d
40	Application of bituminous asphalt coating, installation of waterproofing membrane, geotextile and flashi	26d
41	Application of ascending moisture treatment on exterior walls	10d
42	**FINISHES**	41d
43	Reinstallation of stone steps, stone benches and fittings	2d
44	Restoration of exterior stuccowork	20d
45	Installation of tiles on existing sidewalks	25d
46	**ELECTRICAL**	34d
47	Installation of new electrical fixtures	15d
48	**Lighting**	34d
49	Installation of new electrical system for exterior lighting	18d
50	Re-installation of existing light poles and fixtures	20d



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Noncritical — Milestone — Rolled Up

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SECTION 01011 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Other general provisions of the Construction Contract, including Contract Clauses and Conditions (CC&C) and other Division 1, sections of these Contract Specifications, apply to the requirements of this Section; which, in turn, applies to the Contract Drawings and the Division 2 through 16 sections of these Contract Specifications.

1. Refer to Section 01041 "Project Coordinator" for a definitive outline of coordination responses and minimum actions which are included as work of this Construction contract.
2. Refer to Section 01091 "Definitions and Standards" for definition of terms and acronyms which have principal application in: 1) Texts of drawings and specifications, and 2) Related documentation associated with drawings and specifications, including that which is incorporated by reference.

1.2 DEFINITIONS

A. Equivalent Terminology: Throughout the Contract Documents, and particularly in industry-produced related documentation which has been incorporated by reference; unalike terminology, as adopted by Government and by the construction industry, is used interchangeably. No difference of meaning is implied, where the use of different terms in similar contexts exist; also implied, noted or defined to be equivalent by this section, or elsewhere in the Contract Documents, including Section 01091 hereof. The following definitions and explanations of the equivalency are general, and these terms may also be defined elsewhere in these Contract Documents:

1. Government’s "Project Director" or "FBO Project Director": Equivalent to "Architect", "Designer", "Engineer", "Owner’s Representative", or similar term; in the context of being designated as Government’s (Owner’s) technical representative at the Project Site, for administering the terms of the Contract Documents.
2. "Contract", or "Construction Contract" (also defines "Contractor" and "Construction Contractor"): Literally, refers to the Construction Contract form, sometimes referred to as the "Agreement", form, as executed by both Government and the Construction Contractor. However, the contract or agreement between these two parties includes (by reference) provisions of the entire set of "Contract Documents", as may be listed in that form an therein defined.
3. "Contract Modification", or "Change Order": Defined to indicate an agreed upon (by both parties) change to the terms of the Contract of Construction Contract, executed to the signing of the Contract.
4. "Specifications", or "Contract Specifications": Defined to mean that portion of the Contract Documents consisting of written or diagrammed requirements for materials, equipment, systems, workmanship, and related services for performance of the work.

1.3 PROJECT DESCRIPTION

A. Project Name/Location/Abbreviation:

EXTERIOR INFRASTRUCTURE RENOVATIONS OF THE AMBASSADOR´S RESIDENCE (EMR) - BUENOS AIRES, ARGENTINA

B Project Description:

1. Civil, architectural, mechanical and electrical work associated with the exterior infrastructure upgrading and renovation at the EMR.

1.4 REQUIRED QUALITY OF WORK

A. The Ambassador's Residence is an important historic building. All work on the exterior of the building shall be performed to the highest standards of practice with the best possible workmanship. Care shall be taken to ensure that no original materials to remain are damaged in any way.

1.5 CONTRACTORS USE OF PROJECT SITE

A. General: The contractor shall have use of the site in portions as directed by the Project Director

1. On-Site Waste Disposal: On-Site disposal of objectionable, organic, and hazardous materials, by either burial or burning, will not be permitted as judged by Project Director.
2. Protection of Existing Facilities: Provide temporary enclosure/protection of all existing walls, floors, stairs, benches, gardens, plants and other existing features adjacent to areas of demolition and new work and as directed by the Project Director. Submit protection plan, which includes protection methods and materials to the Project Director for approval.
3. Protection of Existing Plantings: Protect existing plant materials from damage during construction. Allow neither traffic by construction vehicles nor storage of materials to occur inside the drip lines of existing plants and trees. Submit protection plan to the Project Director for approval.
4. Provide site utilization plan for the Project Director's approval, showing how temporary facilities will be distributed and constructed on site; including paved parking, work areas/sheds, and similar elements. Refer to Section 01501 "Temporary Facilities" hereof.

1.6 GOVERMENT´S OCCUPANCY

A. General: U.S. Government employees will continue to occupy the Residence during entire course of Contractor's work. Prevent unnecessary, increased, occasions of risk for security breaches during this period, as directed by Project Director. Control exposure of occupation to deleterious effects of construction-period environmental conditions as directed by Project Director. Avoid the use of equipment and construction tools/procedures, which interfere with the operation of the Residence, as directed by Project Director. Maintain Government's access to the existing Residence during construction as directed by Project Director.

1.7 SPECIAL PROTECTION

A. Comply with attached report which follows this section.

END OF SECTION 01011

SECTION 01041 - PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. A. Other general provisions of the Construction Contract, including Contract Clauses and Conditions (CC&C), Supplemental Contract Clauses and Conditions, and other Division 1 sections of these Contract Specifications, apply to requirements of this Section; this Section in turn applies to Contract Drawings and to Division 2 Through 16 sections of these Contract. Specifications.

    1. Refer to Section 01011, "Summary of Work" for sequencing of Project:
    2. Refer to Section 01301, "Submittals" for requirements on reporting the coordination of project and its work.
    3. Refer to Section 01313, "CPM Scheduling" for requirements on scheduling in support of the coordination requirements of this Section.
    4. Refer to Section 01501, "Temporary Facilities" for requirements on usage of project site in relation to coordination requirements of this Section.

1.2 SUMMARY

A. This Section includes the following administrative and supervisory requirements for coordinating construction operations:

1. General project coordination Procedures
2. Coordination meetings
3. Project site management
4. Coordination drawings
5. Identification of administrative and supervisory personnel
6. Cleaning and protection.

1.3 INTEGRATED COORDINATION

A. General: Coordinate construction efforts to optimize total performance.

1. Sequence for adequate attachment/support/protection of each installation, and for compliance with Government’s security requirements. Do not block off access required for installation of other elements, and do not cover work where access is still required for inspection/testing.
2. Comply with sequence of project as specified in Section 01011, "Summary of Work".
3. Expedite submittals in accordance with Section 01301, "Submittals". Coordinate for effective sequence of review/selection by Government, and for achievement of required lead times for manufacturing, fabrication, testing, delivery, and similar pre-installation requirements.

4. Prepare Construction Progress Schedule as specified in Section 01313, "CPM Scheduling" to provide coordination with Project.

5. Schedule Quality Control Services as specified in Section 01401, "Quality Control Procedures" to maintain optimum sequence in work progression for Project, and to minimize delays and disruptions to work.

B. Contractor's Personnel: Provide full-time Project Coordinator experienced in administration and supervision of construction work and coordination, including mechanical and electrical work, and authorized by Contractor to administer coordination procedures of this Section. The Project coordinator must be fluent in spoken and written English and be present, on site, at any time work is being performed by the general contractor or any of his subcontractors. The Project coordinator will have the authority to negotiate modifications to the contract.

1.4 GENERAL INSTALLATION COORDINATION

A. General: Coordinate installation of the work for achievement of intended overall results, including best visual effect for exposed work. Refer questions concerning intended results to Project Director for clarification before proceeding with elements of work requiring coordination. Except as otherwise indicated, uniformity is intended for installations (e.g., in joint widths). Ensure that each tradesperson working at the Project Site is skilled, experienced, and properly equipped to produce the quality of workmanship required. Remove and replace workmanship which does not comply with requirements or standards, as judged by Project Director. Except as otherwise indicated, comply with the following general requirements as applicable for installation and coordination of work:

1. Each installer shall inspect substrates to receive work and conditions under which installation will be made, and report unsatisfactory conditions. Do not proceed until unsatisfactory conditions have been corrected. Recheck measurements before proceeding.
2. Inspect delivered materials/fabrications/equipment prior to installation, and reject damaged/defective items.
3. Install each element of project only during weather conditions which will contribute to successful workmanship and allow for proper curing/protection/concealment.
4. Comply with manufacturer's instructions for each installation.
5. Isolate each element of work from contact with incompatible work.
6. Coordinate concealment/enclosure/covering over of work with requirements for inspection or testing to avoid necessity for uncovering completed work.
7. Where mounting height for any element of the work is not shown, mount and industry-recommended standard height for application indicated; refer questions to Project Director for decisions. If other like element of work exists, mount the added element of work at the same height unless the Project Director instructs it to be mounted at a specific height.
8. Secure/anchor each element of the work to its supporting substrate as indicated; if not otherwise indicated, secure/anchor as recommended by manufacturer or in compliance with applicable trade association standard. Refer questions to project Director for decisions.

1.5 COORDINATION MEETINGS

A. General: Conduct regularly scheduled meeting for planning and review of coordination requirements and construction progress; hold monthly if not otherwise scheduled. Include project director and representative from each entity, including separate contractors, involved in work at Project Site during construction period covered by meeting. Include representatives of consultants, testing laboratories, and similar specialists concerned with current and immediately upcoming portions of work. Review requirements for the work, including security, temporary facilities, submittal schedule, sequence, safety, general procedures, construction schedule, change orders, interfaces, and similar matters. Where applicable at each coordination meeting, review availability of qualified tradespersons needed for installation work. Require each entity to report pending shortages which might affect scheduled progress. Schedule meetings to accommodate both schedule for reporting progress, and dates established for preparation of payment requests. Allow entities performing the work and supplying services, as well as Government, to present perceived needs and known coordination requirements. Record each meeting, including items presented for discussion, resolutions of conflicts, status of progress, and immediate directions of the work. Distribute copy to Project Director, to each entity which attended, and to each entity affected by matters discussed within 72 hours of close of meeting. Special project meetings, including the following should be handled in similar manner.

1. Pre-Construction Conference: Conduct initial construction conference within 30 days of Construction Contract award. Include Project Director and representative from each entity, including separate contractors, involved with work at Project Site during first quarter of scheduled construction period. Review general plans, conditions, procedures, and requirements for scheduling and prosecution of the work. Review security and material delivery requirements personnel assigned, and contract communication procedures established for the Project. Schedule meetings at project Site where feasible; otherwise, schedule at location selected for greatest convenience to majority of attendees.
2. Pre-installation meetings: Conduct coordination meeting prior to beginning of major installations which require interfacing of work by different entities, including separate contractors. Schedule for time which will be most effective in producing coordination of work; comply with Project Director’s requests for such meetings. Where applicable for coordination of components/systems to be installed, arrange for representatives of manufacturer’s/fabricators of major elements of the work to be present.

B. Progress Schedule: After each project meeting where progress of the work is reviewed, revise and reissue the CPM Schedule in accordance with Section 01313, "CPM Scheduling".

1.6 UTILIZATION OF FACILITIES

A. Utilize Project Site as completely as useful for enhancing performances by each entity involved with installation work, including separate contractors and Government; refer to Section 01501, "Temporary Facilities". Coordinate allocation of available work and storage areas equitably among entities performing installations to produce best overall efficiency in performing the work, and in compliance with requests of Project Director. Schedule deliveries to Project Site to minimize long-term storage of materials/equipment prior to their installations.

B. Remove/dispose of surplus materials and materials which have been rejected/demolished/excavated promptly. Do not use project Site space for selling of materials/equipment which become available for

C. Contractor's disposal. Maintain site security as required for each stage of project development in accordance with Construction Security Plan. Comply with regulations of local governing authorities.

1. Utilize temporary facilities to maximize effectiveness and efficiency. Conserve energy and use of water and drainage capacity as requested by Project Director. Ensure that entities performing installation work have adequate access to temporary facilities and utilize them in a coordinated arrangement.
2. Report unusual events and discoveries promptly to Project Director; these include unexpected weather phenomena, exceptional visitors at Project Site, unusual encounters during excavating, and similar occurrences. Prepare and submit written report to Project Director within 48 hours.

a. During excavating work, notify Project Director promptly upon encountering significant elements of geological, historic, archaeological, or other similar interests. Such elements do not belong to the Contractor; protect and preserve until direction is received from Project Director.
b. During ceremonies at Project Site scheduled by Government, with notification to Contractor by Project Director, coordinate and curtail construction activities as requested to neither interfere with nor endanger participants in ceremonies.

1.7 SUBMITTALS

A Prepare coordination drawings where careful integration of work by separate entities, including by separate contractors and Government, is needed. Require entity whose work involves greatest coordination effort to participate in coordination drawing effort. Show how elements will be interfaced and sequenced. Prior to submittal, each entity involved in coordination shall review drawing and indicate acceptance by signature and date. Comply with submittal procedures of Section 01301, "Submittals".

1. Prepare coordination drawings at scale which is sufficient to show how actual dimensions and shapes of separate elements will relate in the space at scale of not less than 1:25. Prepare composite drawings including plans, elevations, and sections at crucial locations as appropriate.
2. Coordinate drawings which show that actual location and sizes for sleeves, inserts, and similar devices to be placed in concrete and other work, represent a special form of coordination effort. Expedite these drawings to enable preparation of these items in timely sequence.

B. Staff Names: Within 30 days of Contract award, submit list of Contractor's principal staff assignments. Post copies in accordance with Project Director's Instructions.

D. Field Engineering Submittals: Submit the following documentation:

1. Certificates: Submit certificate signed by registered land surveyor or professional engineer certifying location and elevation of improvements
2. Project Record Documents: Submit record of work performed and record survey data as required in Section 01301 "Submittals", and Section 01701 "Completion and Closeout".

1.8 QUALITY ASSURANCE

A. Engineer Qualifications: Engage engineer of discipline required and registered/licensed where Project is located, to perform required engineering services.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 LAYOUT

A. General: Working recorded property markers and bench marks as available and as indicated in Contract Documents, establish permanent points of locations, lines, and levels.
Layout project in its principal lines and levels as needed for accurate placement of work by each entity of Contract, and by separate contractors and Government. Calculate and measure within recognized tolerances; do not scale drawings to determine dimensions. As work progresses, record no corrected deviations from required lines and levels beyond recognized tolerances; report promptly significant consequences of such deviations. Maintain surveyor's log of continuing field measurements; submit record of such measurements at frequent intervals to Project Director, as requested.

1. Confirm locations and elevations of existing utility lines in each area of Project Site before excavating and foundation work is started. Confirm pipe sizes and invert elevations for water-bearing lines. Record type of construction, general condition or state of repair, and auxiliary features of such utility lines.
2. Each entity of Contract installing work is responsible for correct location, line, and level of its work in relation with established lines and levels, and with adjoining and interfacing work by other entities, whether previously or subsequently installed.

3.2 PROTECTION AND CLEANING

A. General: Coordinate and supervise protection/cleaning/maintenance of work at Project Site during receipt, handling, storage installation, curing, and similar stages of construction so that exposure to hazards and deterioration for work is minimized. Apply protective covering where indicated or reasonably needed to ensure that work will remain in undamaged conditions until substantial completion. Adjust, lubricate, and perform maintenance on operable components to ensure no deterioration/damage beyond normal wear at time of substantial completion; and coordinate necessary operation of components to avoid deleterious effects.

1. Limit exposure of work to risks of harm and damage due to excessive loading and pressures, extreme temperatures, humidity, water/ice, solvents/chemicals, puncture,

2. abrasion, heavy traffic, soiling/staining, corrosion, infestation, combustion, contact with incompatible materials, misalignment and other threats.
3. Where work interferes with existing work at Project Site, extend above protection and cleaning coordination requirements to applicable portions of exposed existing work.

END OF SECTION 01041

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including general and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for cutting and patching.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Coordination" for procedures for coordinating cutting and patching with other construction activities.
2. Division 2 Section "Selective Demolition" for demolition of selected portions of the exteriors
3. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

a. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 15 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 SUBMITTALS

A Cutting and Patching Proposal: Submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Owner requires approval of these procedures before proceeding. Request approval to proceed. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the exterior appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform Work.
4. Indicate dates when cutting and patching will be performed.
5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that be temporarily out-of-service. Indicate how long service will be disrupted.
6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
7. Approval by the Architect to proceed with cutting and patching does not waive the Architect’s right to later require complete removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

a. Foundation construction.
b. Retaining walls.
c. Structural concrete.
d. Structural steel.
e. Stair systems.
f. Miscellaneous structural metals.
g. Equipment supports
h. Piping, ductwork and equipment
i. Trenches.

B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components on a manner that would result in increased maintenance or decreased operational life or safety.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

a. Primary operational systems and equipment.
b. Water, moisture, or vapor barriers.
c. Membranes and flashings.
d. Fire protection systems
e. Control systems.
f. Communication systems.
g. Conveying systems.
h. Electrical wiring systems

C. Visual Requirements: Do not cut and patch construction exposed on the exterior spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

1. If possible retain the original installer or fabricator to cut and patch the exposed Work listed below. If it is impossible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.

a. Stonework.
b. Stucco and ornamental plaster.
c. Terrazzo.
d. Stone steps.

e. Garden equipment.
f. Ornamental metal.
g. Exterior wood, French-doors and windows.

1.5 WARRANTY

A. Existing Warranties: Replace, patch and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

1. Before proceeding, meet at the Project Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to the original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original installer; comply with the original Installer's recommendations.

1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chapping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
4. Comply with requirements of applicable Division 2 Sections where cutting and patching requires excavating and backfilling.
5. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
2. Restore exposed finished of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3.4 CLEANING

A Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or the other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01045

ATTACHMENT "A" FOR SECTION 01091

SCHEDULE OF SPONSRS/PRODUCERS OF APPLICABLE STANDARDS.

CONSTRUCTION INDUSTRY SOURCES:

Private Sector Associations: Names of associations who produce consensus-type industry standards and standard specifications are often abbreviated; the following acronyms may be referenced in the text of these Contract Documents. Names and addresses are subject to change; they are believed to be, but not assured to be, accurate as of the date of the Contract Documents.

AA	Aluminum Association 900 19th, NW, Suite 300 Washington, DC 20006	(202) 862-5100
AABC	Associated Air Balance Council 1518 K st, NW, Suite 503 Washington, DC 20005	(202) 737-0202
AAMA	American Architectural Manufacturer's Assoc. 2700 River Rd., Suite 118 Des Plaines, IL 60018	(312) 699-7310
AAN	American Association of Nurserymen 1250 Eye St., NW, Suite 500 Washington, DC 20005	(202) 789-2900
CI	American Concrete Institute P.O. Box 19150 Detroit, MI 48219	(313) 532-2600
ACIL	American Council of Independent Laboratories 1725 S St., NW Washington, DC 20006	(202) 887-5872
ACPA	American Concrete Pipe Association 8300 Boone Blvd., Suite 400 Vienna, VA 22180	(703) 821-1990
AIA	American Institute of Architects 1735 New York Ave., NW Washington, DC 20006	(202) 626-7300
AISC	American Institute of Steel Construction One E. Wacker Dr., Suite 3100 Chicago, IL 60601-2001	(312) 670-2400
AISI	American Iron and Steel Institute 1133 Fifteenth St., NW Washington, DC 20005	(202) 452-7100

ALI	Associated Laboratories 500 s. Vermont St. Palatine, IL 60067	(708) 358-7400
ALSC	American Lumber Standards Committee P.O. Box 210 Germantown, MD 20874	(301) 972-1700
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018	(212) 354-3300
APA	American Plywood Association P.O. Box 11700 Tacoma, WA 98411	(206) 565-6600
ARI	Air Conditioning and Refrigeration Institute 1501 Wilson Bvd., 6th Floor Arlington, VA 22209	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association 6288 Montrose Rd. Rockville, MD 20852	(301) 231-9050
ASA	Acoustical Society of America 500 Sunnyside Blvd. Woodbury, NY 11797	(516) 349-7800
ASC	Adhesive and Sealant Council 1627 K Street, NW, Suite 1000 Washington, DC 20006	(202) 705-7722
ASHRAE	American Society of Heating, Refrigerating And Air Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329	(404) 705-7722
ASPE	American Society of Plumbing Engineers 3617 Thousand Oaks Blbvd., Suite 210 Westlake, CA 91362	(805) 495-7120
ASSE	American Society of sanitary Engineering P.O. Box 40362 Bay Village, OH 44140	(216) 835-3040
ASTM	American Society for Testing and Materials 1916 Race St. Philadelphia, PA 19103-1187	(215) 299-5400

AWI	Architectural Woodwork Institute 2310 S. Walker Reed Drive Arlington, VA 22206	(703) 671-9100
AWPA	American Wood Preservers Association P.O. Box 849 Stevensville, MD 21666	(301) 643-4163
AWPB	American Wood Preservers Bureau P.O. Box 5283 Springfield, VA 22150	(703) 339-6660
AWS	American Welding Society P.O. Box 351040 550 LeJeune Rd., NW Miami, FL 33135	(305) 443-9353
CTI	Ceramic Tile Institute of America 700 N. Virgil Ave. Los Angeles, CA 90029	(213) 660-1911
GA	Gypsum Association 810 First St., NE, Ste. 510 Washington, DC 20002	(202) 289-5400
MIA	Marble Institute of America 33505 State St. Farmington, MI 48024	(313) 476-5558
NBHA	National Builders Hardware Association (NOW DHI)	
NCMA	National Concrete Masonry Association P.O. Box 781 Hemdon, VA 22070	(703) 435-4900
NEC	National Electrical Codee (NFPA No. 70)	
NECA	National Electrical Contractors Association 7315 Wisconsin Ave. Bethesda, MD 20814	(301) 657-3110
NEMA	National Electrical Manufacturers Association 2101 L st., NW, Suite 300 Washington, DC 20037	(202) 457-8400
NFPA	National Fire Protection Association One Battery march Park P.O. Box 9101 Quincy, MA 02269-9101	(617) 770-3000

NKCA	National Kitchen Cabinet Association P.O. Box 6830 Falls Church, VA 22046	(703) 237-7580
NLGA	National Lumber Grades Authority 1055 W. Hastings ST., Suite 260 Vancouver, British Columbia Canada V6E 2E9	(703) 237-7580
PCA	National Paint and Coatings Association 1500 Rhode Island Ave., NW Washington, DC 20005	(604) 687-2171
NRCA	National Roofing Contractors Association One O´Hare Centre 6250 River Rd., Ste 8030 Rosemont, IL 60018	(708) 318-6722
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077	(312) 966-6200
S.D.I.	Steel Door Institute 31200 Detrit Ave. Cleveland, OH 44145	(216) 889-0010
SGCC	Safety Glazing Certification Council (c/o ETL Testing Laboratories) Route 11, Industrial Park Cortland, NY 13045	(607) 753-6711
SIGMA	Sealed Insulated Glass Manufacturers Association 111 E. Wacker Drive Chicago, IL 60601	(312) 644-6610
MACNA	Sheet Metal and Air Conditioning Contractors National Association P-O- Box 70 Merrifield, VA 22116	(703) 790-9890
TIMA	Thermal Insulation Manufacturers Association 29 Bank Street Stamford, CT 06901	(203) 324-7533
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062	(708) 272-8800

END OF ATTACHMENT "A

SECTION 01091- DEFINITIONS STANDARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Other general provisions of the Construction Contract, including Contract Clauses and Conditions (CC&C) and other Division 1 sections these Contract Specifications, apply to requirements of this Section; which, in turn, applies to the Contract Drawings and the Division 2 through 16 sections of these Contract Specifications.

1.2 COORDINATION OF TERMINOLOGY

A. Equivalent Terms: In recognition of differences in terminology used by Government and industry, the following is an example listing of approximately equivalent terms (and acronyms) which may be found throughout these contract documents and in manufacturer's product data, industry standards, governing regulations, reports by engaged services, and similar locations, and particularly in certain sections of Division 2 through 16 Contract Specifications, which have been derived from recognized master specifications sections. Refer other questionable terminology to Project Director for determination of equivalency; the use of one term in lieu of other choice implies no substantive difference in meaning:

	Private Industry Term	**Equivalent by Government**
1.	Agreement	Construction Contract
2.	Application for payment	Request for Progress Payment
3.	Architect, and/or Engineer (A/E)	Contract A/E (A/E)
4.	Bid/Tender, and Bid Price	Proposal, and proposal Price
5.	Bidder	Offeror
6.	Bidding Documents, and Bidding Requirements	Solicitation Documents, and Proposed Contract Documents
7.	Change Order (CO), and Change Directive	Change Order (CO), and Contract Modification (CM)
8.	Drawings	Contract Drawings
9.	Instructions to Bidders	Solicitation Provisions, and Instructions to Offerors
10.	Invitation for Bids	Request for Proposals
11.	General Conditions (GC)	Contract Clauses and Conditions

12.	Guarantee Period, and Warranty Period	Correction Period
13.	Owner	Government (of the USA)
14.	Owner's Representative	Contractive Officer, and Project (PM), Manager and Contracting Officer's Technical Representative (COTR)
15.	Provisional Sum, and Allowance	Allowance Price
16.	Project Representative	Project Director (PD), also FBO Project Director
17.	Punch List	Schedule of defects
18.	Schedule of Values	Detailed Estimate for Progress Payments
19.	Specifications	Contract Specifications
20.	Supplementary Specifications	Supplementary Clauses and Conditions

1.3 ACRONYMS

A. Abbreviated Terminology: Except as otherwise defined herein and at prominent locations in the text of contract documents, abbreviated terminology is the Government's or construction industry's well-recognized abbreviated form. Refer questions concerning the intended meanings for abbreviations or acronyms, which may be found in contracts documents without further definitions:

1. BOM - Bill of Materials

2. BOQ - Bill of Quantities

3. CM - Construction Management Div. (of FBO)

4. COTR - Contracting Officer's Technical Representative

5. DCM - Deputy Chief of Mission (at the Post)

6. DISCO - Defense Investigative Security Clearance office

7. DS - Bureau of Diplomatic Security (of DOS)

8. EMR - Ambassador’s Residence)

9. FAR - Federal Acquisition Regulation

10. FAM - Foreign Affairs Manual (of DOS)

11. FBO - Office of Foreign Buildings Operations (of DOS)

12. FSN - Foreign Service National (as an employee)

13. GFE, GFM, GF - etc.- Government Furnished Equipment, Gov. Furnished Material, Gov. Furnished etc.

14. MSG - Marine Security Guard ("msg" used for monosodium glutamate)

15. PD - Project Director (for Government)

16. PM - Project Manager/Program Mgmt. Div. (of FBO)

17. RSO - Regional Security Officer

18. UBC - Uniform Building Code

1.4 DEFINITIONS

A. General Explanations: In addition to basic Construction Contract definitions as found in Contract Clauses and Conditions, and its Supplementary Clauses and Conditions; a substantial portion of the text of other contract documents, including these Contract Specifications and notations on the Contract Drawings, provide definitions for terms used at other locations in the documentation. The drawings are recognized as being graphic and diagrammatic in nature, and not completely definitive on the terminology of requirements shown thereon. Certain terms used in the contract documents are defined as follows; and such definitions are not necessarily either complete or exclusive., but are general for the work, to the extent they are not defined more explicitly at other location in these contract documents.

1. Contract A/E: Refers to firm engaged by Government to produce designs, contract documents, and related information, which defines work of the project to be performed by the Construction Contractor. Definition is extended to include similar services performed directly by U.S. DOS and its engaged consultants; and includes similar terms which may be used in the contract documents, such as "Architect", "Designer", Engineer", or "Consultant", where used in a similar general context as for "Contract A/E".

2. Indicated: Refers to the means of recording requirements for performing work of the contract documents, and includes graphics representations as well as

specifications, notes, schedules, and similar texts. Where term such as "shown", "specified", "noted", or "scheduled" is used, it is for the purpose of helping the reader locate requirements in the contract documents, and no limitation of location or requirements is intended.

3. Approved: Where used in conjunction with the Government (FBO) Project Director's responses to submittals, requests, applications, inquires, reports, claims, notices, and similar actions by the Contractor, the meaning will be held to limitations on responsibilities and duties as imposed by provisions of Contract Clauses and Conditions. In no case will Project Director's "approval" be interpreted as a release of Contractor from responsibility to fulfill requirements of the contract documents.

4. Directed, and similar terms including "selected", "requested", "permitted", "authorized", and other terms used in similar context: Unless further defined, will mean "as directed by the Project Director", "as selected by the Project Director", "and similar phrases; except that such terms will not be interpreted to extend Project Director's responsibilities into the area of Contractor's construction supervision.

5. Regulation, and similar term: Refer to laws, statutes, ordinances, orders, and similar required compliances, imposed by either governing authorities or by provisions of the contract documents; and include applicable rules, conventions, customs, and agreements prevailing within construction industry, regardless of whether lawfully imposed by governing authority.

6. Furnish: Except as further defined for specific work; will be held to mean supply and deliver to the Project Site; ready for unloading, unpacking, assembly, installation, and similar handling as applicable for each instance of use.

7. Install: Except as further defined for specific work; will be held to mean the primary operations at the Project Site; including, but not limited to, unloading unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations, as applicable for each unit of work.

8. Provide: When used in connection with performance of work; will be held to mean furnish and install, complete and ready for the intended use.

9. Installer: The entity (person or firm) engaged by Contractor or any of its subcontractors, at any tier of responsibility, for performance or installation of a particular unit of work at the Project Site, either singly or in conjunction/cooperation with other installers for portions of the unit of work and adjoining work. It is a basic requirement that each installer be qualified for and equipped for the operations it is engaged to perform.

    a. Experienced Installer: Installer qualified with at least five years of experience in the operations engaged to perform: who meets or exceeds the requirements for staffing, training, testing, certifying, licensing, tooling,

equipping, and similar requirements as specified and otherwise implied in each instance, for the type/quality of workmanship indicated; and who has demonstrated proficiency, safety, and compliance with regulations by recognized authorities having expertise or jurisdiction.

b. Specialist: Where indicated, installation must be performed by specially qualified "specialists", who are recognized experts in the work required; as demonstrated by certificates of testing and performance, which are appropriate and applicable in each instance. Where indicated, engage related product manufacturer as specialist for the installation of the unit of work. Compliance with these requirements will neither be held to relieve Contractor of responsibility for fulfilling requirements of contract documents, nor interpreted to provide a basis for conflicts with applicable regulations and trade union jurisdictions.

10. Trades: Contract document terminology, which is oriented to recognized names of building trades and crafts (e.g., "Carpentry"), is not intended to imply that certain construction activities must be performed/Installed solely by tradespersons, unionized or non-union, of a corresponding generic name (e.g. "Carpenters"). It also does not imply that related requirements apply exclusively to work performed by tradespersons of matching generic name.

11. Testing Laboratory: An independent entity engaged to perform specific inspecting and/or testing work, either at the Project Site or elsewhere; reporting the results of such inspections and testing; and, Where required, providing interpretations of such inspecting, testing, and reporting.

12. Project Site: As further defined elsewhere in these contract documents, the Project Site defines the space available at the project location, for Contractor’s use in performing the work; either exclusively or shared with Government and separate contractors performing other work as part of the project. Drawings show extent of Project Site, which may be or may not be coincident with description of land upon which project is located.

1.5 GENERAL EXPLANATIONS

A. Specification Format: These Contract Specifications are organized, titled, and numbered in relation to the 16-Division Format, as prepared and maintained by The Construction Specifications Institute of Alexandria, VA. Portions of certain section texts hereof have been edited from nationally recognized master specification systems, and this has influenced their internal organization and terminology in certain respect, which will be held to have no significant technical bearing on either the meaning of specification content or the contract document requirements.

1. Abbreviated language, where used, may imply additional words, and these will be interpreted to be included where appropriate and as applicable. Where required for proper context in Contract Document interpretations, singular words will be held to be plural and plural words will be held to be singular.

2. Imperative language is used to describe work to be performed by the Contractor. At certain locations in the Contract Documents, subjective language is used to describe either responsibilities to be fulfilled indirectly by the Contractor, as noted, or by others.

3. The colon (:) is used, in each related context, to indicate "means", "shall be", "is defined as", or similar implied terminology for the abbreviated texts hereof.

B. Minimums/Maximums: Except as the otherwise specifically noted; the level of quality and the quantity indicated is, in every case, the minimum for the work to be provided and performed; refer questionable instances of applicability to Project Director for clarification. The work as performed may either comply exactly with minimums or maximums as indicated, within specified or industry-accepted tolerances; or may exceed minimums (or fall below maximums) within reasonable limits, as acceptable to Project Director. In general, maximum numeric values for performance of the work are so noted, except where the context of the requirement implies this qualification.

1. Conflicting Values: Where seemingly conflicting values have been indicated; as an example, where compliance with an imposed standard conflicts with drawing dimensions; refer conflict to Project Director for resolution. In general, the most explicitly indicated value will govern; except, Project Director has the authority to require compliance with the most stringent requirement, where determinated to be necessary for adequate fulfillment of the implied intention of the Contract Documents. Where conflicting requirements in the contract documentation imply two qualities/quantities of substantially equal value; as an example, where two different colors are indicated by related documents for the same element of work; refer resolution of selection question to Project Director, whose decision will be final.

a. Wherever the foregoing questions of maximum vs., minimums, and/or conflicting values in contract documentation, are involved with specified precedence, or priority for considering contract documents, as may be specified by Contract Clauses and Conditions; refer question to Project Director, who’s judgment on question as well as precedency of requirements will be final.

2. Contractor’s Option: Where seemingly conflicting values have been indicated in contract documentation; and Project Director’s review indicates that either (or more than one of several) specified requirements can be accepted; option is then Contractor’s provided selection is properly coordinated with and integrated into adjoining portion of the work.

C. Graphic Symbols: In general, graphic symbols included with contract documentation, including those shown on Contract Drawings, either are defined thereon or are those symbols recognized in the construction industry for the purposes inferred by the context thereof. Where not otherwise defined, consult industry-standardized symbolization publications, as sponsored by trade associations related to instances of usage, including AIA (e.g.,” Architectural Graphic Standards" published by John Wiley & Sons, Inc), ASHRAE, ASME, ASPE, IEEE, ANSI, Federal Government Agencies/Departments, and

other recognized consensus interests of the construction industry. Refer graphic symbolization questions (not resolved by foregoing procedures) to Project Director for resolution.

1.6 GOVERNMENT/INDUSTRY STANDARDS

A. General Applicability: In the attached listing, the sponsors/producers of standards which may be imposed for work-compliances elsewhere in these contract documents, are listed alphabetically by the industry-recognized acronym, followed by name and address/telephones. This information is for the Contractor's convenience in acquiring copies of imposed standards, and in determining whether selected materials/products/systems/workmanship will fulfill the related requirements.

1. Imposed standards by Government/Industry sponsors/ producers have same force-and-effect, and are hereby made a part of these contract documents, as if copied directly herein. In general, copies are not provided with contract documents by Government.

2. Publication dates for imposed standards are, in each case, the standard in effect as of the date of these contract documents, except as may be otherwise specifically indicated.

    a. Contractor, at its option, may request Project Manager's approval to provide work complying with same-standard-of-a-later-date. Submit such requests in same form/procedures as required for change orders or contract modifications, with full documentation of reasons for and effect from making such proposed change.

3. Record copies: Where required by Project Director, maintain copy of each imposed standard at Project Site, for review by authorized persons; and return to Government with "as built" documentation at time of substantial completion.

4. Each entity engaged for performance of work, including product manufacturing, handling materials/products, fabricating, installing, working to dimension, finishing, testing, and similar operations, is required to be familiar with imposed standards applicable to that entity's operations

    a. As may be applicable for the engagement of entities, to perform work which is subject to imposed standards, submit documentation confirming their qualifications; include certifications, licenses, permits, test reports, judgments, and similar documentation.

END OF SECTION 01091

SECTION 01301 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Other general provisions of the Construction Contract, including Contract Clauses and Conditions (CC&C), Supplemental Contract Clauses and Conditions, and other Division 1 sections these Contract Specifications, apply to requirements of this Section; which, in turn applies to Contract Drawings and to Division 2 through 16 sections of these Contract Specifications.

1. Refer to Section 01041, "Project Coordination", for requirements on coordinating submittal procedures with time scheduling and other requirements, including coordination drawings.
2. Refer to Section 01313, "CPM Scheduling" for requirements regarding integrations of submittals with time scheduling.
3. Refer to Section 01401, "Quality Control Procedures", as required for work of this project, and as related to scheduling and submissions.
4. Refer to Section 01701, "Completion and Closeout" for related final submittal requirements.
5. Refer to first section in Division 15 and in Division 16 for expanded general submittal requirements for mechanical and electrical work.
6. Refer to Sections 2 through 16 the Technical Specifications.

1.2 SUMMARY

A. Administration of Procedures: The prime construction contractor, referred to as "Contractor", is required to administer integrated processing of submittals, including for work of subcontractors. This shall be in compliance with requirements of Contract Documents and requests by project Director (A/FBO/PE/CM). These submittals can be summarized to include the following as applicable:

1. Primary work-related submittals, including various forms of Product data, Shop Drawings, and Samples.
2. Administrative (other) submittals, including initial surveys, field measurements, operational plans, initial CPM scheduling, reports on progress, project inspection and test reports, and similar submissions.

    a. Refer to contract clauses for administrative submittals such as bonds, certificates of insurance, permit licenses, shipping bills, value engineering proposals, applications for payment, and schedule of values. These will not be included in Submittal Register

3. Closeout submittals: see Section 01701, "Completion and Closeout", including: warranties, workmanship/maintenance bonds, maintenance agreements, operating and maintenance manuals, tools, extra stock, spare parts, keys, record drawings, final surveys, and similar submissions which will be listed in Submittal Register.

a. Refer to contract clauses for other closeout submittals such as final application for payment, final status of changes, releases, occupancy permits, certificates of insurance, certificate of completion of final punch-list, final meter readings, consent surety, and statement of settlement of liquidated damages. These will not be included in Submittal Register.

B. Submittal Register: A list of submittals in form of Submittal Register (Attachment "A") shall be submitted by Contractor to Project Director to keep Project Director apprised of current status of all submittals. The Contractor shall submit this Submittal Register in two forms: computer printout on 8-1/2" x 11" white paper, and computer file on 3-1/2" diskette. This register shall be prepared and maintained by Contractor using IBM PC compatible Lotus 1-2-3 version 4.01 computer spreadsheet software (or later versions), "Submittal Register Program" file, and installation instructions. The Contractor shall furnish, during Project, all computer hardware and software required by Contractor to run and print Lotus 1-2-3 version 4.01 files so that this software runs without conflict with any other software Contractor uses on this computer platform. The Construction Management Division (A/FBO/PE/CM) will
Furnish to Contractor the "Submittal Register Program" file and installation instructions. If initial list of submittals has been developed by A/E (Columns A-E) and approved by Office of Foreign Buildings operations (A/FBO), it will be included in "Submittal Register Program" file furnished by A/FBO/PE/CM to Contractor. The intent of this submittal system is to improve coordination and management of submittals by A/FBO, A/E, and Contractor by facilitating exchange of computer diskette program data files between them without laborious and costly retyping, and attendant delays.

C. Refer to Schedule of Submittal Descriptions in this Section for more precise identification of submittal types.

1.3 GENERAL SUBMITTAL PROCEDURES

A. Coordination: Integrate timing of each submittal with construction schedule to avoid delays. Allow sufficient time allowed for purchasing, fabricating, manufacturing, curing, testing, delivery, and similar sequential activities required prior to scheduled time for installation. Coordinate submittals on related units of work so that Government’s approvals on one unit, which must be held for review of submittals on another, will not result in delays in performance of the work. Allow sufficient and reasonable time for review, examination, testing, and return of submittals by Government, including possibility of rejection/resubmittal cycle in processing.

1. Initial Listing: Within 60 days of "Notice to Proceed", provide Project Director with copy of computer printout and program/data diskette file of Submittal Register; refer to Attachment "A" at the end of this Section. Contractor shall fill-in: 1) Column f. "Scheduled Submittal Date", 2) Column h, "Approval Needed By Date", and 3) Column Ii, "Date Manufacturer’s Guaranty or Warranty Expires". The Contractor shall also identify submittal items which may require expedited review to avoid delay in construction schedule (see subparagraph below on "Extensions of Contract Time"). The Contractor shall add to Submittal Register any other

2. submittals that require approval by Project Director so that construction can proceed to satisfactory completion by Contract completion date.
3. Extensions of Contract Time will not be authorized on basis of time requirements for submittal processing. In general, and except as otherwise indicated. Government will require up to 45 days from receipt at Project Director's office to review (i.e., review/examine/test/return) each submittal and resubmittal, provided submittal/resubmittal is properly sequenced with related submittals.
4. Identification Label: Provide as a minimum the following information for each submittal in formal developed with Project Director:

    a. Unique submittal number related to Contract Specifications Section (e.g.,10200.1,10200.2, etc. for louvers).
    b. Project name and number, date of related Contract Documents an date of submittal.
    c. Name, Address, and telephone number of Contractor and Manufacturer/Fabricator.
    d. Numbers and titles of applicable Contract Specification Sections and Contract Drawings.
    e. Provide appropriate place and sufficient space for Government to record, by signature and date, its approval status and limitations.

5. Transmittals: Subject to Project Director's Instructions and to requirements of related documentation for entire Project, including security requirements for handling of classified information , transmit each submittal through prime Construction Contractor to Project Director's office at location indicated; this may be revised by Project Director from time to time.

    a. Use transmittal form(s) designated elsewhere in these Contract Documents, and as designated by Project Director.
    b. Maintain records of submittal transmissions by dates, using required procedures for processing; and record dates of primary transmission and final return of approved submittal an Schedule of Submittals.

6. Information Coordination: Contractor shall coordinate all submittals required by Contract Documents, and thoroughly check them for accuracy, completeness, and compliance with contract requirements. Submission of product data, shop drawings, or samples constitutes representation that assembles, products, or materials indicated therein will be available in timely manner and in quantities required for project.

    a. In each submittal transmission, include Contractor's certification that submittal information complies with requirements of Contract Documents, and has been coordinated and checked. Submittals delivered to Project Director without Contractor's certification may be returned for resubmission.

B. Approval of Submittals: Depending upon nature of submittal. Government's response will be through Project Director, and may involve actions by various Government entities and Government-engaged services, including Contract A/E firm and similar participants in the

C. design, documentation, testing, and certification of Project and work of this Contract. Submissions will be reviewed only for general compliance with intent of Contract Documents and with information given therein. Approval does not relieve Contractor from responsibility for any errors or missions in submittals, non from responsibility for complying with requirements of Contract. Submittal will be marked appropriately to indicate one of the following approval responses:

1. "Approved as Submitted" (AS), with no requirement for resubmittal on items requiring only Government´s identification of submittal´s compliance with requirements of Contract Documents, with final acceptance of related work depending upon that same compliance.
2. "Approved as Noted" (AN), with no requirement for resubmittal, but with no intention of waiving requirements for work to comply with requirements of the Contract Documents in order to gain final acceptance and approval.
3. "Rejected and Resubmit" (RR), with corrections of defects in the submittal or of deficiencies in the proposed work represented by the submittal. Do not proceed with purchasing, fabrication, delivery, or other activity on such work until resubmittal and receipt of approval has been obtained. Do not allow submittals with this action marking to be in use or present at Project Site or other locations where work is in progress.
4. "Information Only" (IO), will be marked on return of submittals which are received by Government for information only or for record purposes.

D. Metrication: Prepare all types of submittals showing measurements in hard metric units (SI system) to greatest extent practicable; do not use units which are result of conversion from Inch-Pound measurements.

1. For pre-printed material, include attached sheet providing metric conversions where appropriate.

E. Classified Information Handling: Comply with Government requirements and limitations for procedures followed in preparation, submittal/handling, and protection of classified information.

1.4 WORK-RELATED SUBMITTALS

A. Product data: Pre-printed material in various forms to illustrate portion of the work or to indicate conformance to requirements, but not prepared exclusively for this Contract. Where feasible, collect product data for manufactured products required in each unit of work as defined by related products affect preparation of shop drawings, submit product data sufficiently in advance of time required for shop drawing completion.

1. Choices: Mark producer’s standard product data sheets to show clearly which choices have been made by Contractor, and which choices are available for Government’s selection, such as to color, pattern, texture, and similar selections. Delete or strike out non-applicable data.
2. Include manufacter´s installation instructions and recommendations for packing, shipping, handling, maintenance, protection, testing, start up, and other procedures as applicable.

3. Copies: Except as otherwise indicated, furnish two original publication copies in each product data submittal, and four additional photocopies (or original publication copies). One original copy will be returned to Contractor. Where product data must be custom produced (not available as manufacturer's standard printed information), submit as produced (not available as manufacturer's standard printed information), submit as "shop drawings" in accordance with associated requirements. Furnish copies of product data submittals which have been returned with marking of Government's approval to each entity involved with installation of related work, including to separate contractors and Government agencies. Show intended final distribution on transmittal form. Do not allow copies of product data which do not bear marking of Government's approval to be used in any manner for performance of the work. Where applicable, print and retain extra copies of product data as required for inclusion in operation and maintenance manuals.

B. Shop Drawings: Information in various forms prepared specifically for this Contract to illustrate a portion of the work or to indicate conformance to requirements. Prepare newly-composed drawings to show how combination of products and fabricated materials will be installed to form specified units of work and interfaces with other units of new or existing work. Do not provide marked-up Contract Drawing. Note deviations from intention of Contract Documents. Include drawings. Note deviations from intention of Contract Documents. Include drawings for fabrication, installation, setting, use in each set of shop drawings. Identify each component, show full set of relevant dimensions, with specific notation as to which dimensions are based upon field measurements. Include performance/test ratings as applicable to assembles shown by shop drawings.

1. Sheet sizes: Minimum A4 (210 mm x 297 mm), except where larger dimensions are necessary for actual-sizes patterns, templates, and similar required drawings, and as agreed upon with Project Director for other unique shop drawing requirements.
2. Coordination drawings, as specified in Section 01041, "Project Coordination", are considered a unique form of shop drawings, and are subject to requirements of this section.
3. Copies: Except as otherwise indicated, furnish six blue-line or black-line prints of each shop drawing which will be marked appropriately by Government; one will be returned to Contractor. Furnish copies of corrected shop drawings which have been marked with Government's approval to each entity involved with installation of related work, including separate contractors and Government agencies. Do not allow another copies of shop drawings to be used in any manner for performance of work. Show intended distribution on transmittal form. Revise and resubmit shop drawings if changes are made subsequent to approval.

C. Samples: Physical examples illustrating portion of the work, or establishing standard for evaluating appearance and other characteristics of finished work, or establishing standard for evaluating appearance and other characteristics of finished work, or both. Provide samples of actual materials, equipment, or assemblies at full-scale size, fully fabricated, and complying with physical requirements as shown and specified. Record, by written description attached to transmittal form, deviations from requirements which were necessary during sample preparation. Record generic names, sources manufacturer, compliances with applicable standards, and similar data applicable to each element of sample submitted.

1. Quality Control: Where samples are required for purpose of achieving quality control, prepare appropriately for inspection and testing.
2. Visual Control: Where samples are required for purpose of visual control on color, pattern, texture, or kind, or for matching or determining compatibility of these qualities with other or existing work, submit range of product that is available for Government's selection. Where applicable, complete this submittal and selection. Where applicable, complete this submittal and selection process as preliminary step to other sample preparation and submittal requirements. With submittal, indicate different between possible selections which would affect delivery dates, designation of source, compliances with standards and regulations, overall performance of element, future availability, and similar differences; otherwise by not noting differences, Contractor indicates that options for choice are equal in every respect.
3. Quantities: Except as otherwise indicated, submit three samples for each item where samples are required, and prepare sample panels and installations as single unit. Where samples are required of natural and synthetic materials and where variations in color/pattern/texture are inherent, include three or more units of material within each sample which illustrates extremes and average appearance of material; label each unit with generic description of nature of extreme appearances, describe how material will be held within the ranges indicated by multiple samples, and not use materials in project which exceeded established limitations. One set of samples will be returned to Contractor for production quality control purposes, and the other two sets will be retained for Project Director's use. Refer to individual technical sections of Contract Specifications for authorized incorporation of certain samples into the work, provided they are in undamaged condition at time of use. Record on transmittal form each request for incorporation of submitted sample into the Work. Comply with Project Director's instructions for removal/disposition of in-place samples which are not acceptable as work, and of sample panels and installations constructed at Project Site.

1.5 ADMINISTRATIVE (OTHER) SUBMITTALS

A. General: In addition to requirements for work-related submittals, provide miscellaneous submittals referred to as "administrative" or "other" submittals. Comply with applicable requirements of article entitled "General Submittal Procedures". Categories of required administrative submittals include, but are not necessarily limited to the following: Construction Accident Prevention Plan (CAPP), Construction Security Plan (CSP), Quality Control Plan, Initial CPM Scheduling, initial property survey, inspection reports, factory test reports, and field test reports. These submittals will be included in Submittal Register.

1. Construction photographs will be allowed in accordance with limitations identified in Construction Security Plan.
2. Other administrative submittals identified in specifications will not identified in Submittal Register. These include, but are not limited to the following: Substitutions, alternates/unit prices/allowances, meeting minutes, CPM updates, field measurements, progress reports, environmental reports, safety/accident reports, and security compliance reports.

1.6 CLOSEOUT SUBMITTALS

A. Specific requirements for project closeout are specified in Section 01701, "Completion Closeout".

1.7 SCHEDULE OF SUBMITTAL DESCRIPTIONS

A. Product Data (PD):

1. PD1, Manufacturer's Catalog data: Data composed of catalog cuts, brochures, circulars, specifications, and product data, and pre-printed information in sufficient detail and scope to verify compliance with requirements of Contract Documents. Manufacturer's standard and optional components for each product which have been selected to meet contract requirements shall be clearly marked.
2. PD2, Manufacturer's Standard Color Charts: Preprinted illustrations displaying choices of color, texture, and finish for material or product.
3. PD3, Instructions: Preprinted material describing installation of a product, system, or material, including special notices and Material Safety Data Sheets, if any, concerning impedances, hazards, and safety precautions.
4. PD4, Standard Test Reports: A report signed by authorized official of testing laboratory stating that material, product, or system identical to material, product, or system to be provided has been tested in accordance with requirements specified. Test report shall identify test method and material, state that test was performed in accordance with test requirements, state test results, and indicate whether material, product, or system has passed or failed test. Testing shall have been within three years of date of award of this Contract.
5. PD5, Manufacturer's Certified Drawings: Dimensioned drawings of product, including components, and schedule of performance data; it shall include manufacturer's certification that product shown and to be provided complies with requirements of Contract Documents. The certified drawings shall be dated after award of this Contract. Include project name, contract number's(s), supplier's name and address, certifier's name, and list of specific requirements which product is intended to address.
6. PD6, Other Product Data: Other product data not included in above categories.

B. Shop Drawings (SD):

1. SD1, Data: Submittals which provide calculations, descriptions, or other documentation regarding the work.
2. SD2, Drawings: Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, detail of fabrications, layout of particular elements, connections, and other relational aspects of the work.
3. SD3, Schedules: A tabular list data, or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.
4. SD4, Statements: A document, required of Contractor, or through Contractor by way of supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to further the quality or orderly progression of portion of the work by

documenting procedures, acceptability of methods or personnel, qualifications, or other verification of quality.

5. SD5, Certificates: Statements signed by responsible officials of manufacturer of product, system, or material attesting that product, system, or material meet specified requirements. The statements shall be dated after award of this Contract, name project, and list specific requirements which it is intended to address.
6. SD6, Coordination Drawings: Submittals which graphically show coordinated location of items specified in more than one specification section.
7. SD7, Other Shop Drawings: Other shop drawing submittals not included in above categories.

C. Samples (S):

1. SA1, Samples: Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.
2. SA2. Color Selection Samples: Samples of available choice of colors, textures, and finishes of product or material, presented over substrate identical in texture to that proposed for the work.
3. SA3, Sample Panels: An assembly constructed at project site in a location acceptable to Project Director, and using materials and methods to be employed in the work.
4. SA4, Sample Installations: A portion of assembly or material constructed and placed in location directed and, if approved by Project Director, retained as part of the work.
5. SA5, Other Samples: Other samples not included in above categories.

D. Administrative/Other (AD):

1. AD1, Inspection reports: Reports of Inspection. Each report shall be properly identified.
2. AD2, Factory Test Reports: A written report which includes findings of test to be performed by Contractor on actual portion of the work or prototype prepared for this project before it is shipped to job site. The report shall be signed by authorized official of testing laboratory, and shall state that test was performed in accordance with test requirements, state test results, and indicate whether material, product, or system passed or failed test.
3. ASD3, Field test reports: A written report which includes findings of test made at job site, or on sample taken from job site, on portion of the work during or after installation. The report shall be signed by authorized official of testing laboratory or agency, and shall state that test was performed in accordance with test requirements, state test results, and indicate whether material, product, or system passed or failed test.
4. AD4, Other Administrative Submittals: Other administrative submittals not included in above categories.

E. Closeout (CO):

1. CO1, Operation and Maintenance Manuals: Data intended to be incorporated in an Operations and Maintenance Manual; refer to Section 01701, "Completion and Closeout".
2. CO2, Warranties: Specific warranties: required for portions of the work; refer to Section =1701, "Completion and Closeout".
3. CO3, Spare Parts: Spare parts and extra stock; refer to Section 01701, "Completion and Closeout".
4. CO4, Other Closeout Submittals: Other submittals as identified in Section 01701,"Completion and Closeout" not included in above categories.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 01301

SECTION 01313 - CPM SCHEDULING

PART 1 - GENERAL

1.1 GENERAL

A. The general contractor shall prepare and maintain a detailed progress schedule as described below. This schedule shall be the contractor's working schedule an shall be used to plan, organize, and execute the work, record actual performance and progress, and show how general contractor plans to complete all remaining work as of the end of each progress report period. The schedule shall be in the form of a time scaled network diagram (Critical Path Method) and the principles and definition of the terms used herein shall be as set forth in the Associated General Contractors of America (AGT) publication Construction Planning & Scheduling copyright 1994, in the event of discrepancies, this section shall govern the development and utilization of the CPM schedule.

1.2 INITIAL TIMETABLE

A. A preliminary network diagram, defining the contractor's planned operations for the first 90 days shall be provided within 15 calendar days after notice to proceed is acknowledged. The approved preliminary schedule shall be used for payment no to exceded90 days after notice to proceed-

B. The general contractor shall promptly prepare a Detailed Project Schedule in the form of a network diagram and shall submit the same for approval by the Project Director within sixty (60) calendar days after notice to proceed. Pre-submittal reviews are available to facilitate coordination of the Contractor's schedule with other preceding., parallel, and seceding schedules.

1.3 NETWORK DETAILS

A. The Detailed Project Schedule for this contract be constructed to show the order in which the general contractor purposes to carry out the work, and to indicate the restrictions of access and availability of work areas and the availability and use of manpower, materials and equipment. The contractor shall utilize the Detailed Project Schedule in planning, scheduling, coordinating, and performing the work under this contract (including all activities of subcontractors, equipment vendors, and suppliers). The following criteria shall form the basis for assembly of the logic:

1. What activity must be completed before a subsequent activity can be started?
2. What activities can be done concurrently?
3. What activity must be started immediately following a completed activity?
4. What major economic facility or manpower restrictions are required for sequencing these activities?

1.4 PROJECT SCHEDULE

A. The Detailed Project Schedule shall provide sufficient detail and clarity of form and technique so that the contractor can plan, schedule, monitor, control and report on the progress of the work, in addition, it shall provide the Project Director with a tool to monitor and follow the progress for all phases of the work. The Detailed Project Schedule shall comply with the

various limits imposed by the scope of work and by any contractually specified intermediate milestone and completion dates includes in the contract. The degree of detail shall be to the satisfaction of the Project Director, but the following factors shall have a bearing on the required depth of activity detail:

1. The physical and structural breakdown of the project;
2. The contract milestones and completion dates;
3. The type of work to be performed and the labor trades involved;
4. All purchase, manufacture, and delivery activities for all major materials and equipment;
5. Deliveries of owner-furnished equipment and/or materials;
6. Preparation, submittal, and approval of shop and/or working drawings and material samples;
7. Approvals required by regulatory agencies or other third parties;
8. Plans for all subcontract work;
9. Assignment of responsibility for performing specific activities;
10. Access to and availability of work areas;
11. Identification of interfaces and dependencies with preceding, concurrent, and follow-on contractors;
12. Actual tests, submission of tests reports, and approval of test results;
13. Planning for phased or total takeover by the Government;
14. Identification of any manpower, material or equipment restrictions.

B. The activities includes in the Detailed project Schedule shall be analyzed in detail to determine activity time durations in units of project working days. Durations shall be based on the labor (crafts), equipment and materials required to perform each activity on a normal work-day basis. Activity durations over 15 working days shall be kept to a minimum except in the case of non-construction activities such as procurement of materials, delivery of equipment, and concrete curing. All durations shall be the result of definitive manpower and resource planning by the contractor to perform the work in consideration of contractually defined on-site work conditions. The manpower to be assigned, by craft definition, shall be shown on each construction activity of the network. No more than five (5) crafts may be assigned to a specific activity. If more crafts are required, then the activity in question must be broken down into additional activities.

C. The contractor may use manpower or equipment restrains, separately noted, to optimize and level manpower and equipment requirements. The individual activities involved may be sequenced within the limits of the available total float. However, when this leveling technique is used in establishing the initial schedule, it shall be reflected in the logic with restrains identified as "restraint-for manpower or equipment leveling purposes only". Critical or near critical paths resulting from the use of manpower restraints shall be kept to a minimum. Near critical paths shall be defined as those paths having 10 days or less of total float at the time of initial submission.

D. A unique event numbering system shall be required to code or identify activities by bid items, work items, areas, procurement, etc. unless provided for elsewhere in the software program. No two activities shall have the same event numbers for identifications.

E. The estimated cost to perform each work activity shall be noted graphically on each activity included in the network. The sum of the costs assigned to all activities shall equal to contract value. No activity costs shall be assigned to manufacture or delivery activities.

F. The networks shall be prepared on (D) or (E) size sheets and shall have a little block along the bottom margin of the front page. The little block shall include the legend, project name, contractors name, date of preparation, revision number and date, and revision approval initials. Exceptions to the size of the network sheets and the use of computer graphics to generate the networks shall be subject to the approval of the Project Director.

G. The networks shall clearly indicate all contract milestones and completion dates. All networks shall be drafted to show a continuations flow of information from left to right with no arrows from right to left. The primary path(s) of criticality shall be clearly and graphically identified on the network(s). Each network drawing shall be have a standard grid coordinate system with alpha designations on the Y axis (top to bottom) and numerical designations on the X axis (left to right) for quick activity reference and for following the planned sequence when using multi-sheet networks, logic ties which cannot be graphically demonstrated as continuous restrains between different segments of the network shall be identifies as remote dummies, and shall be referenced as "to/or from event number page number, "followed by appropriate alpha, numeric grid references, or equivalent designation.

H. As part of each update submission, the status of work, in progress shall also be similarly identified and the reported percent complete graphically indicated on each activity remaining in progress as of last report period.

1.5 USE OF COMPUTERS

A. The mathematical analysis of the Detailed Project Schedule shall be made by computer and a tabulation for each activity shall include as a minimum the following:

1. Activity Identification number;
2. Activity description;
3. Activity code(s);
4. Schedule and actual/remaining durations for each activity;
5. Earliest start date (by calendar date);
6. Earliest finish date (by calendar date);
7. Actual start date (by calendar date);
8. Actual finish date (by calendar date);
9. Latest start date (by calendar date);
10. Latest finish date (by calendar date);
11. Float in work days:
12. Monetary value of each activity;
13. Percentage of activity completed;
14. Contractor’s earnings based on the reported portion of activity completed.

B. The computer program used in marking the mathematical computation shall be capable of compiling the total value of completed and partially completed activities. The program shall also be capable of accepting revised completion dates as modified by approved time

adjustments and re-computation of all activity dates and float accordingly. In the event the contractor's software program is not comparable with the Government's , the contractor shall provide all scheduling data in accordance with the U.S. Army Corps of Engineers "Data Exchange Format", as described in ER-1-1-11 dated 15 Mar 90.

C. The following computer outputs shall be required as part of the initial schedule submission and each update thereafter:

1. Activity sort by preceding event number from lowest to highest and then in the order of the following event number;
2. Activity sort by the amount of total float, then in order of preceding event number; Outputs (a) and (b) above shall show all activities, including restraints for the duration of the project.
3. The electronic database used to produce the above reports will be "backed -up" on computer diskette (3.5) and provided to the Project Director.

1.6 MASTER SUMMARY SCHEDULE

A. The Contractor shall also prepare and submit a time-scaled Master Summary Schedule on a single sheet that shows the total project in approximately 50 to 100 activities. This schedule will accurately summarize the computerized Detailed Project Schedule and shall have common events for correlating the two levels of schedule indenture. Emphasis shall be placed on major milestones and key dependencies among the various parties involved. The Master Summary Schedule shall be updated monthly.

1.7 CASH FLOW PROJECTION

A. Using the cost assigned to each activity of the Detailed Project Schedule, the contractor shall develop a cash flow analysis illustrated by a computer listing and a graphic display, both of which shall depict the estimated cash draw down in the aggregate, by month, over the life of the project. The cash flow projection shall be updated each month to show actual cash draw down and a forecast of remaining payments to be made over the remaining life of the project.

1.8 MANPOWER REQUIREMENTS FORECAST

A. The contractor shall prepare a manpower analysis in the form of a series of graphic displays depicting manpower by principal trades in the aggregate, and in accordance with the Detailed Project Schedule. The graphs shall display the number of man-days of effort, for each month, over the life of the project. This submission may be computerized or manually prepared, but shall be correlated with the manpower assigned to each activity of the Detailed Project Schedule. The Manpower Requirements Forecast shall be updated monthly and shall include the manpower actually used by trade as of the current report period and the manpower required to complete all remaining contract work.

1.9 SUBMITTALS

A. The Detailed Project Schedule (logic diagrams and computer tabulations), the Master Summary Schedule, the Cash Flow Projection, and the Manpower Requirements Forecast

shall be submitted to the Project Director for approval within sixty (60) calendar days after notice to proceed in the following quantities:

1. Detailed and Summary Schedules (reproducible and 5 sets of prints);
2. Computer tabulations (5 copies 8 1/2" x 11" in size,
3. Manpower Requirements Forecast (5 copies 8 1/2" x 11" in size);
4. Cash Flow Projections (5 copies 8 1/2" x 11" in size).

B. In addition to the above, the contractor shall provide a copy of its computer file in the form of a 3.5" floppy disk. The disk shall include the information contained in the schedule submittal. If additional submittals are necessary, a disk for each submittal shall be provided by the contractor. The contractor shall affix a permanent exterior label to each diskette submitted. The label shall contain the type of schedule (preliminary, initial, update, or change), full project number, project name, project location, data date, name and telephone number of the contractor's scheduler, and the MS-DOS version used to format the diskette.

C. Milestones

1. The following milestones will be established by the Detailed Project Schedule.

   a. Date of start of work in Area of Detail 1/C101 Sheet CMPD/101.
   b. Date of Completion of Work in Area and Detail 1/C101 Sheet CMPD/C1001.
   c. Date when the garden area will no longer available for use by the government

1.10 APPROVAL PROCESS

A. The Project Director shall approve or disapprove, in writing, the contractor's submission within fifteen (15) calendar days after receipt of all required information.

B. If the contractor fails to submit the initial Detailed Project Schedule, Master Summary Schedule, Manpower Requirements Forecast, Cash Flow Protection, or the computer disk, within the time prescribed, or revisions thereof within the requested time, the owner may withhold approval of progress payment estimates until such time as the contractor submits the required information.

C. At the request of the owner or its authorized representative, the contractor shall be required to participate in any meetings necessary to reach a mutual agreement and approval of the initial Detailed Project Schedule, Master Summary Schedule, Manpower Requirement Forecast, Cash Flow Projections, or the computer disk.

D. If any of the required submissions are returned to the contractor for corrections or revisions, they shall be resubmitted along with a new computer disk for approval within 10 (10) calendar days after the return mailing date. Re-submittals shall be in the same quantities as noted above. Review and response by the owner shall be given within ten (10) calendar days after receipt of each new submission.

1.11 UPDATINGS

A. The initial updating shall take place during the first week after the approval of the contractor's schedule. Subsequent updates shall be scheduled at the end of each month thereafter for the duration of the contract. The Detailed Project Schedule and computer tabulations shall be reviewed jointly at a meeting with the owner's authorized representative for the purpose of verifying:

1. Actual start dates;
2. Actual completion dates;
3. Cost value of work reported in place;
4. Activity percent completion;
5. Revised logic (as built and projected) and changes in activity durations, cost, and manpower assigned;
6. Influence of change orders;
7. Revisions due to authorized modifications;
8. Incorporation of approved time extensions. The owner shall inform the contractor of the date, time, and place of each updating.

B. The contractor shall come to the updating meetings with the above data prepared in advance for each meeting to provide, as of the end of the updating period, a complete and accurate report of current procurement and construction progress and a depiction of how the contractor plans to continue the work of this project to meet all contract completion dates. All network changes and status data agreed to during each update completion dates. All network changes and status data agreed to during each update shall be considered as acceptable by both parties unless written notice of any exceptions is given by an objecting party within ten (10) calendars days after receipt of the contractor's update submission. For major network changes that cannot be agreed during an updating meeting, the contractor shall submit , in writing, such revisions for the owner's approval prior to inserting such changes into the network. Submissions may be in the form of marked-up networks, or schedule abstracts, provided they are submitted with a letter of transmittal. The submission and approval procedures for his information shall follow the same timetable described for Change Orders, Delays, and Time Extensions noted below.

C. As part of the monthly updating process, the contractor shall prepare a Narrative Progress Report describing the physical process during the report period, plans for continuing the work during the forthcoming report period, actions planned to correct any negative float predictions, and an explanation of potential delays and/or problems and their estimated impact on performance and the overall project completion date. In addition, alternatives for possible schedule recovery to mitigate any potential delay and/or cost increases should be included for consideration by the owner.

D. Five copies each of the Narrative Progress Report, the updated Detailed Project Schedule (networks and computer computations), the Summary Master Schedule, the Cash Flow Projection, the Manpower Requirements Forecast, and an updated computer disk shall be submitted to the owner within five (5) calendar days after each updating meeting.

E. If the contractor falls to timely submit any of the update deliverables, the owner may withhold approval of progress payment estimates until such time as the contractor submits the required update reports.

1.12 CHANGE ORDERS, DELAYS AND TIME EXTENSIONS

A. When change orders or delays are experienced by the contractor requests an extension of time, the contractor shall submit to the owner a written Time Impact Analysis illustrating the influence of each change or delay on the current contract schedule completion date. Each Time Impact Analysis shall include a frag-net demonstrating how the contractor proposes to incorporate the change order or delay into the Detailed Project Schedule.

A frag-net is defined as a sequence of new activities and/or activity revisions that are proposed to be added to the existing schedule to demonstrate the influence of delay and the method for incorporating delays and impacts into the schedule as they are encountered.

B. Each analysis shall demonstrate the estimated time impact based on the events of delay, the date the change was given to the contractor, the status of construction at the point in time, and the event time computation of all activities effected by change or delay.. The event times used in the analysis shall be those included in the latest update of the detailed project Schedule or as adjusted for the events of delay.

C. Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the path of activities at the time of actual delay or at the time notice to proceed was issued for a change. Each time Impact Analysis shall be submitted in triplicate and within fifteen (15) calendar days after a delay occurs or notice of direction for proceeding with a change order is given to the contractor. In cases where the contractor does not submit Time Impact Analysis for a specific change order or delay within the specified period of time, it shall be deemed to have irrevocably waived its rights to any additional time and cost.

D. Approval or rejection of each Time Impact Analysis by the owner shall be made within fifteen (15) calendar days after receipt to each Time Impact Analysis, unless subsequent meetings are necessary. Upon approval, a copy of a Time Impact Analysis signed by the Owner or its authorized representative shall returned to the contractor for incorporation into the schedule.

E. Upon mutual agreement by both parties, frag-nets illustrating the influence of change orders and delays shall be incorporated into the Detailed Project Schedule during the first update after agreement is reached.

F. In the event the contractor does not agree with the decision of the owner regarding the impact of a change or delay, it shall be resolved in accordance with the disputes clause of the contract.

G. A data disc shall be provided as required by Special Clause "Data Exchange Format". The automated scheduling system utilized by the contractor shall be capable of providing all requirements of this specification. As many data disk(s) as required in the "Standard data Exchange Format" shall be provided with thee Initial Schedule, Monthly Updates, and all NAS revisions or requests for revisions. Refer to Special Clause for a complete description of this format.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01313

SECTION 01502 – TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Other general provisions of Construction Contract, including Contract Clauses and Conditions (CC&C); Supplemental Contract Clauses and Conditions, and other Division 1 sections of these Contract Specifications, apply to requirements of this Section.

1. Refer to and comply with related security requirements included in this section.
2. Refer to, and comply with, related safety requirements of Section 01533 – "Construction Safety Program" hereof.
3. Refer to, and comply with, related phasing and special protection requirements indicated in Section 01011 "Summary of Work".

1.2 SUMMARY/DESCRIPTION/DEFINITIONS

A. General: The purpose of this Section is to indicate specific minimum requirements associated with certain temporary facilities, recognized as necessary for performance of the work. This is in no way intended to limit the general requirement for the Contractor to provide whatever temporary facility may be required, reasonably and properly, to complete the performance of the work. The scope of "temporary facilities" is defined, by custom in the building construction industry, to include those materials, services, actions constraints, special devices/tools and similar items needed to complete permanent work of the Project; but which, usually do not become an integral part of the permanent work. Temporary facilities specified in this section for this Project can be summarize to include, but not by way of limitation, the following categories:

1. Utilities and Services:

a. Water.
b. Drainages and sewers.
c. Electrical power.
d. Telephone service.

2. Construction Facilities:

a. Distribution of water and drainage piping.
b. Distribution of power and communications wiring
c. Heating, cooling, ventilating.
d. Electric lighting
e. Shop, fabrication and installation enclosures.
f. Storage enclosures.
g. Dewatering and pumping
h. Paving, stairs, ladders, and hoisting.

3. Support Facilities and Services:

a. Field offices, furnishings, equipment.

b. Toilets, lunch rooms, drinking water.
c. Waste collection, disposal, and janitorial.
d. Environmental protection facilities.
e. Rodent/pest control service.
f. Project identification and signage.

4. Security and Protection Facilities:

a. Facilities to accommodate security plan and procedures.
b. Fire protection.
c. Perimeter fence, gates, and lighting.
d. Watchmen services.
e. Building enclosure and lockup.
f. Protective coverings.
g. Barricades, closures, and traffic control.
h. Roadways and walkways.

B. Metering and Recording: The contractor shall provide connections to local utilities such as water, sewer, electrical power, phone storm water drains, and others as required. The contractor shall also provide metering of all utilities and services used by the contractor. The contractor will pay for all utilities and services used by the contractor and his subcontractors, suppliers, etc. and provide record of payment to the Project Director on a monthly basis.

C. Temporary facilities required for each element of work, usually not on a general basis, are specified in the various sections of Division 2 – 16.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide temporary facilities as reasonably required, as may be requested by Project Director, for performance of the work. See drawing CMPD/C01 “General Location Plan” for areas to be fenced and used for building temporary facilities by the contractor. Provide the type of temporary facility which will achieve the intended results adequately, and with assurance.

1.4 QUALITY ASSURANCE

A. General: Comply with governing regulations as enforced by authorities; including building codes, requirements of utility companies, health/safety regulations by police, rescue, fire departments, environmental protection regulations, and similar applicable regulations.

1. Standards: Comply with the following adopted standards for temporary facilities, as may be applicable in each case; and as may be applicable to Project, and for Project Site and location:

a. NFPA Code 241, *Building Construction and Demolition Operations.*

b. ANSI-A10 series standards for *Safety Requirements for Construction and Demolition.*

c. NFPA 70, *National Electrical Code,* for installation of temporary electrical work.

d. U.S. Army Corps of Engineers *Safety and Health Requirements Manual* EM 385-1-1, 10/84; as may be applicable to work in this Section.

1.5 PROJECT CONDITIONS

A. General: Comply with conditions existing and developing, at Project Site, for the implementation, maintenance, and continuation-in-service of temporary facilities. Comply with recommendations of Project Director, as to when, and to what extent it is appropriate and acceptable, to convert from use of temporary facilities to use of Project's permanent facilities, and services.

1. Prepare and submit separate bar-graph type time schedule, showing beginning and ending times for each principal category of temporary facility; initially submitted within 45 days of "Notice to proceed", and updated monthly thereafter as project conditions and progress of work evolve.

2. Maintain temporary facilities in clean, sanitary, safe operating condition; and do not allow conditions of use to become inefficient, overloaded, hazardous, or otherwise deleterious to Government's interests; comply with Project Director's requests.

3. Locate and relocate temporary facilities as may be necessary to accommodate proper performance of the work, including work by separate contractors and Government; remove as soon as use is no longer required, and restore substrates and environments to original conditions as required by contract.

4. Inventory plants that will be required to be removed for construction of temporary facilities shall be protected, relocated, nursed and replanted providing they remain healthy. After the work, the Contractor shall restore the area affected by the performance of the work to original conditions.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. General : Except as otherwise indicated, provide either used materials/equipment, which are in good condition and suitable for intended uses, or provide new materials and equipment, at Contractor's option, for temporary facilities. Where applicable, comply with related requirements for permanent work of this project, as determined by Project Director.

1. Flammability: Use only materials for construction of temporary facilities, which have reasonable resistance to burning. Provide tarpaulins labeled by UL, with flame-spread rating of 15 or less; including translucent, nylon reinforced, laminations of polyethylene or PVC films, with similar fire-retardant ratings.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITIES/SERVICES

A. General: Connect to existing franchised utilities for required services, where reasonably possible; including, but not limited to water, sewerage, surface drainage, electrical power, and telephone service. Engage franchised vendors, were possible, to install services at locations shown or as designed by Project Director, to comply with security requirements. Pay connect-and-disconnect fees as required by franchised utilities. Obtain easements as may be necessary to extend utilities to Project Site. Survey needs of entire Project during construction, including work by separate contractors and Government, and arrange for sufficient utility capacities. Provide trucked-in and out services, where possible, for work in progress prior to completion of temporary utility services and distributions.

1. General Exception : Except as otherwise indicated, provide temporary connections to existing utilities, using permanent forms of construction; comply with requirements of franchised providers of such utilities and services.

2. Potable Water: Provide potable water for entire water requirement of construction period. Demonstrate on a monthly basis to Project Director that potable water distribution is safe for human consumption. Sterilize piping of temporary potable water system, prior to use.

3. Provide adequate water capacity and pressure for fire protection.

4. Surface Drainage: Prevent silt, sediment, contaminates, and other products of the construction operation from entering sewer systems and off-site waterways. Provide straw bales, erosion control fabric, silt fences, sediment ponds, and similar devices to clean up water runoff; comply with local environment protection regulations. During construction and at time of substantial completion, inspect sewers receiving construction-site water runoff; and, where required by Project Director or local authorities, clean such sewers of accumulated products of construction.

5. Sanitary Sewer: Provide connection of temporary sanitary facilities to sanitary sewerage system. The use of septic tanks, cesspools, and similar methods for disposal of effluent will not be permitted.

6. Back-up Power: In connection with temporary electric power service from locally franchised utility company, provide an engine-driven back-up power generator. Provide automatic/remote start capability, with push button starter located with control facilities at entrance gate; and sized for sustained load of not less than 55 Kw.

7. Permanent Utilities and Services: At the earliest reasonable date, connect with permanent utility lines and service connections, and remove temporary utilities and services; comply with Project Director’s requests.

3.2 CONSTRUCTION FACILITIES

A. General: Provide fully distributed temporary facilities for performance of work at Project Site; including, but not limited to: water and drainage, hose, waterways; power, communication wiring; ambient air conditioning, including control of temperature, electric lighting; protection of work completed and in progress, including shop, fabrication and installation enclosures; enclosures for stored materials and equipment; removal of accumulated water; and hoisting, access equipment, for materials, tools and work persons. Provide facilities sufficient for installations by separate contractors and Government, as well as work of Construction Contract.

1. Construction water: Pipe water to hose bibs at points of convenience within construction areas.

2. Flooding Protection: Provide and maintain earthen embankments around excavations, so as to prevent flooding from runoff of storm water.

3. Power Distribution: Provide overload-protected, weatherproof, grounded, power distribution system; sufficient for offices, maximum predictable use of power tools, lighting, HVAC, test equipment, start-up of power driven equipment as required before connection with permanent power distribution system, and similar temporary power demands. Locate plug-in outlets, at points of convenience within building construction are, and at designated fabrication areas and shops, spaced so that every area where construction work is being performed can be reached by a single extension cord of not more than 30 m length. Provide automatic ground-fault interrupter feature on temporary power distribution system.

4. Temporary Lighting: Provide a combination of day lighting, general electrical lighting, and plug-in task lighting; sufficient in every area of the construction work to ensure proper-and-adequate performance of work, reading of signs, inspection, testing, security surveillance, and other need-to-see requirements of Project; including the needs of separate contractors and Government. Provide local switching for each area of temporary lighting, which will enable energy conservation by both a “turned off” and a “reduced level” mode of lighting. Provide high-efficiency fluorescent lighting fixtures/tubes, where applicable. Comply with Project Director’s requests for temporary lighting at every stage of project work.

5. Temporary HVAC: In conjunction with temporary enclosure of work, and where applicable, provide temporary heating, cooling, drying, humidification, and similar ambient conditioning of space; as required for proper performance of work, and curing and protection of completed work. Provide safe energy source and equipment selection for temporary HVAC; utilizing no combination which could be considered more hazardous than LPG-fired, UL-tested and approved, temporary space heaters. Do not use oil burners, salamanders, or other open-burning units, nor hazardous fuels. Do not position HVAC units where a deleterious effect might be produced on completed work.

   a. Utilize permanent HVAC facilities for temporary HVAC service at the earliest feasible date, as may be agreed upon with Project Director. Provide fully qualified / licensed operators, and instigate protective measures to minimize

possible damage to system/equipment. At conclusion of temporary service, clean and replace fluids, filters, and other expendable and damaged parts; and generally restore used portions of HVAC system to near-new condition.

6. Work Enclosures: Provide temporary enclosure of work being fabricated, installed, cured, protected from weather, locked up against possible loss. Provide appropriate quality of enclosure in each case, with sufficient resistance to whatever the work is being protected against. Where appropriate, provide translucent-type enclosure so as to not restrict day lighting. Provide shops, sheds, storage spaces, and similar enclosures of a durable nature, which can be continued-in-use through the Construction Time. At the earliest feasible dates, provide temporary enclosure and lock-up of each separate portion of the building. Protect completed work in every reasonable way, so as to ensure undamaged condition at time of substantial completion.

7. Dewatering : Provide dewatering of excavations and elements of construction, by appropriate means and methods; including well-pointing system, pumping, and other methods of removal. Remove accumulated water wherever it could interfere with prosecution of the work or threaten protection thereof.

8. Hoisting and Access : Provide general-use forms of hoisting equipment; suitable for Project configuration, and suitable for materials, fabrications, tools, equipment, work platforms, ramps, stairs, ladders, and similar devices for work persons' access, and for inspectors and other authorized visitors including Government's personnel.

   a. When temporary use of permanent stairs is authorized by Project Director, cover each tread with plywood or similar material, to protect tread finish.

3.3 SUPPORT FACILITIES AND SERVICES

A. General: Provide indirect, work-related, support facilities as required in conjunction with performance of work at Project Site; including but not limited to: 1) Field offices, for both Government's administrative personnel and engaged consultants, and for Contractor's and subcontractor's field forces; toilets, lunch rooms, drinking fountains, and similar facilities for everyone at Project Site, including both Americans and foreign nationals; 2) All-inclusive waste collection and disposal service, and including janitorial services for temporary buildings; 3) General internal construction-base signage, including bulletin board for the posting of notices; rodent and pest control services as appropriate for location of Project; 4) Environmental control facilities, including exterior thermometers; and 5) Similar support facilities as may be required, and as requested by Project Director. Provide facilities sufficient for use by Government, as well as by Contractor's and subcontractors' forces and everyone else authorized to be at Project Site. Comply with governing regulations, and with local traditions and customs for such facilities and services.

1. Government's and Contractor's Field Offices : Provide suitable temporary field office spaces, including furnishings, fixtures and equipment, and sized to accommodate the incidental field office needs of Government, supervisors, administrative personnel of Contractor, subcontractors, suppliers, consultants, engaged test agencies, officials, and others engaged in performance of the work of the entire

Project. Comply with Project Director's requests for the manner of administering the field office utilization, so as to accommodate entities with a specific need for office space at Project Site, as opposed to those needs which could be accommodated in off-site space elsewhere, including nearby in the city. "Contractor's Field Office" remains property of Contractor; remove and dispose of at project completion; comply with requests of Project Director for time and manner.

2. Toilets and Lunch Rooms : Provide adequate accommodations for sanitation, lunch room, and similar needs of personnel at the Project Site, who are not accommodated by use of field office facilities. Provide an adequate number of drinking water fountains or dispensers, distributed for convenience and efficiency-of-use around the construction areas of the site; maintain supply of disposable paper cups at each dispenser. Provide separate toilet accommodations for male and female personnel.

   a. Provide water and drain-piped temporary plumbing and sanitary facilities. Provide adequate temporary buildings and enclosures.
   b. Provide wash facilities located nearby toilets and lunch rooms, and elsewhere as indicated, for adequate sanitation and in conjunction with handling of health-threatening materials; supply with potable water, and maintain supply of cleaning compounds and disposable hand towels.
   c. Provide lunch facilities adequate for the Project.
   d. Existing toilet room in the garage area will be made available to the Contractor for toilet and shower facilities for the duration of the project. The Contractor shall restore all fixtures and finishes at the conclusion of the Project. This work shall include, without limitation: painting walls, ceilings, doors, windows and trim; cleaning, repairing and regrouting tilework; and replacing sealants.

3. Waste Handling and Janitorial Services: Provide proper and adequate segregated waste containers; for the collection and removal of waste materials in different categories; including, but not limited to : hazardous wastes, flammable wastes, sanitary and health care wastes, garbage, wastes for recycling as required by local authorities, inert and dry wastes, and incidental debris from the construction process. Dispose of wastes daily. Clean waste containers regularly and adequately. Dispose of wastes in a lawful manner.

   a. On a daily basis, keep Project and Construction Site clean and clear of accumulated wastes, including surplus materials, trimmings, incidental demolished work, and construction debris. Clean completed elements and portions of work, and maintain in "broom clean" condition, except as otherwise indicated.
   b. On a daily basis, provide janitorial services, including the restocking of disposable products, for the maintenance of temporary offices, security spaces, toilets, first-aid rooms, lunch rooms, shower rooms, and similar facilities. Scrub toilet and first –aid room fixtures and floors daily, and scrub floors and walls of shower rooms daily. Provide weekly cleaning, damp mopping or vacuuming, as may be appropriate for other floors. Provide monthly washing of windows and cleaning of other walls, ceilings, light fixtures, and similar facility surfaces. Comply with Project Director's specific requests to maintain facilities in a reasonably clean and

sanitary condition, at all times. Extend janitorial services to include permanent facilities as may be authorized for use as temporary facilities.

c. As directed control site dust by sprinkling or other means approved by the Project Director. Coordinate with environmental protection program.

4. Environmental Protection, General: Provide facilities and services as may be required by governing authorities to protect the environment; as it may be affected by performance of the work at the Project Site, and elsewhere. Minimize the generation of wastes and noises; through the efficient and shielded use of materials, tools, procedures; and avoid the pollution of every element of the environment. Restrict the use of noise producing tools to necessary prosecution of the work, and to daylight and early evening hours, which will result in a minimum level of complaints from nearby occupancies, and comply with requests of local authorities. Prohibit the discharging and loss of substances from the construction process which could possibly contaminate the atmosphere, surface water, or ground including ground water.

5. Rodent and Pest Controls : Make appropriate provisions and adjustments in facilities and procedures used to complete the work, so as to eliminate or minimize the threat of deleterious effects from attracted insects and animals, including roaches and rodents. Specifically, employ specialized services to control such encroachment of pests at Project Site, and as may be requested by Project Director; so that , at the time of substantial completion, Project and Project Site will be relatively free of entrenched and harbored pests of every description. Do not allow the intrusion of life and health threatening and property destructive types of insects and animals during performance of work at Project Site. Employ only environmentally-safe methods and products, in control of rodents and pests; comply with Project Director's requests.

6. Project Identification and Signage :

a. Provide appropriate temporary signage of a durable nature within the Project Site, as reasonably required for the effective and efficient guidance of persons at the Project Site and as requested by Project Director. Prepare signage in English duplicated in Spanish; supplemented with international pictorial graphics, where appropriate for information of persons unable to read texts provided.

3.4 CONSTRUCTION SECURITY AND PROTECTION FACILITIES

A. General : Provide adequate temporary security and protective facilities, for prevention of property losses and disruption, destruction, deterioration of the work, and of facilities being utilized to perform work as may reasonably be required by the Project Director. Required temporary security and protection facilities and procedures include, but not by way of limitation, the facilities necessary for compliance with the requirements of specification Section 01533, "Construction Safety and Health Program" and "security" sections hereof. Related required "protection" facilities include the following:

1. Fire Protection: Except as otherwise indicated, and in every instance, complete and place-into-service permanent fire protection system and equipment. Prior to the time permanent facilities are placed into service, provide temporary fire protection facilities,

as will be adequate for conditions at the Project Site. Where possible, arrange with local fire department to respond to calls for assistance and service in cases of fire emergency. Provide temporary portable fire extinguishers, complying with applicable provisions of NFPA Std. N° 10, and UL rated; multi-purpose dry chemical type, 5.0 kg size, UL rated "4-A:60-B:C." Maintain unobstructed access to fire extinguishers; and locate at each prime point of access to each principal office, lunch room, fabrication shop, storage enclosure, guard house, and similar temporary facility at Project Size. Prohibit smoking, except in designated areas of relatively low fire hazard. During welding and burning in fire-hazardous areas of exposure, provide stand-by fire protection personnel and adequate supervision of operations. No smoking will be permitted within the building.

2. Perimeter Fence, Gates, lighting: Refer to drawing CMPD / C01 for required fencing. Additional gates may be added to facilitate construction; the additional gates will be as approved by the Project Director. Provide lighting to fully illuminate the construction site.

   a. Provide steel chain-link fencing of not less than 2.75 m high fabric, 51 mm mesh, 3.77 mm wire, 362 g per sq.m. zinc coating with standard zinc-coated steel pipe top rail and line posts, spaced at 3 m centers set in post holes filled with concrete.

      1) Provide matching chain-link entrance gates, of manually-operated swinging type; with diagonal braces and bottom pipe rail. Provide heavy-duty gate posts, and standard security lock-up type hardware. Except as otherwise indicated provide temporary entrance gates as shown in drawing CMPD/C01 and as required for entrance and exit.

   b. Provide weather-shielding guard shelter, 1.2 x 0.9 x 2.1 m high; located immediately outside main vehicular control entrance gate. Provide clear polycarbonate vision panels, all around; and lock-up hardware for non-use periods.

3.5 REMOVAL OF TEMPORARY FACILITIES

A. General: As soon as each temporary facility is no longer needed, and as agreed upon with Project Director, remove from Project Site. Restore substrates; restore subgrade base courses of site, including areas to be paved or otherwise finished. Comply with Project Director's instructions on manner of removal and disposition; including retention of certain elements as may be applicable for continued use by Government. In general, and where applicable, remove temporary facilities as soon as approved temporary use of corresponding permanent facilities have been authorized and achieved, for whatever continuing temporary need there may be. Complete work which has been delayed because of presence of temporary facilities.

B. Closeout of Temporary Facilities: Refer to Section 01701 " Completion and Closeout" hereof, for other required actions for the termination and disposition of temporary facilities.

C. Security Regulations

C1. Security Requirements

The Contractor will be required to comply with the general conditions for the construction security requirements for this project.

C2. Clearance Requirements

1. The Contractor must provide the following for each employee who is to work at the construction site seven working days prior to using that employee :

    a. Typed and signed optional Form 174 (3-86); Spanish version. This form must include the number of the personal identification card (cédula de identidad, Policía Federal Argentina),
    b. Typed and signed Embassy record check request form with all pertinent biographic information;
    c. (2) ea 1 ½ " by 1" ½ passport type photographs of the individual.

    The Embassy Security Office will conduct such checks as it deems appropriate on each worker, and maintain a list of authorized workers for the project. The Embassy will notify the contractor immediately if it is determined that any worker will be denied clearance.

2. Drivers and other delivery personnel who do not require access to the immediate construction site may be exempted from this requirement at the discretion of the Embassy Security Officer.

C3. Identification Procedures

The Embassy will issue identification cards to be used by the workers cleared for the project. The identification cards will be the property of the Embassy. Procedures will be as follows:

1. All workers must report to work through the job site entrance. The Embassy guard will keep a list of authorized workers.

2. The employee must present to the guard his/her personal identification card (cédula de identidad). The guard will ensure that the worker is authorized, then issue an Embassy construction worker identification card. The worker's cédula will be kept by the guard until the worker leaves the premises.

3. The Embassy construction identification card must be worn so that it is plainly visible at all times while on the Embassy grounds. The card must be returned to the guard each time the employee leaves the premises.

C4. Security Policies

1. Only workers cleared by the Regional Security Office and listed on the authorization list will be permitted entry to work in the job site.

2. All workers will be searched upon entering and exiting the job site. Searched may also be conducted of employed leaving the premises at the direction of the American Supervisor or the Embassy Security Officer.

3. No weapons (firearm, knives, etc.) may be brought into the job site. Any worker with a weapon will be turned away from the project and the Embassy may withdraw his / her clearance.

4. No drugs, narcotics or intoxicating substances may be brought into the job site without a medical recipe. The use of prescribed medication by a worker must be informed to the American Supervisor by the Contractor.

5. No alcohol may be brought into the job site. Alcohol consumption is not allowed in the job site or 6 hours prior to entering the job site.

6. No personal electronic equipment or components, radios, cameras or other similar items may be brought into the job site.

7. Organizing or participating in any form of gambling activities will not be allowed.

8. A disorderly conduct will not be permitted. The use of abusive or offensive language, intimidation and bodily aggression will not be allowed. This includes any act interfering with normal efficiency.

9. Employee must stay into the construction site or other locations specifically determined by the American Supervisors or the Embassy Security Officer. Workers may not move about the building premises without escort of a regular Embassy employee.

10. The Embassy reserves the right to deny access to any worker or individual, at the discretion of the Embassy.

11. The American Supervisors and the Embassy Security Office must be advised in advance of all deliveries of materials or equipment to the job site. The names of the driver or other personnel in the delivery vehicle shall be provided, along with the license plate number of the delivery vehicle. Vehicle appearing without advance notice will be turned away from the Embassy. All vehicles entering or exiting the premises will be searched.

The Contractor shall prepare and submit to the Project Director a security plan indication how he intends to accomplish all protective security aspects of the project.

END OF SECTION 01502

SECTION 01533 - CONSTRUCTION SAFETY AND HEALTH PROGRAM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Other general provisions of Construction Contract, including Contract Clauses and Conditions (CC&C); Supplemental Contract Clauses and Conditions, and other Division 1 sections of these Contract Specifications, apply to requirements of this Section.

1.2 SUMMARY

A. General: The purpose of this Section is to indicate nature-and-scope of Contractor responsibilities for:

1. Safety and health of persons and property at Project Site.

2. Developing a Construction Accident prevention Plan (CAPP) for management procedures, operations, training, inspections, assessments and reporting of safety and health matters on Project Site:

B. Drawings: Refer to Contract Drawings for safety and health requirements of general nature which are not repeated in this Section, but which are incorporated into this construction safety and health program by reference.

1.3 REGULATIONS AND STANDARDS

A. Governing regulations and specific technical safety and health requirements for work being performed at Project Site and incorporated into this safety and health program include the following:

1. Latest edition of U.S. Army Corps of Engineers (COE) Safety and Health Requirements Manual, EM 385-1-1; this document is available at U.S. Government Printing Office.

2. When and where construction activity impacts on U.S. Embassy employees and public, the DOS Foreign Affairs Manual (FAM); Vol. 6, Subchapter 610 "Safety Health and Environmental Management Program" shall also apply; this document is available from Construction Management Division, Program Execution Office within Office of Foreign Buildings Operations (A/FBO/PE/CM).

1.4 DEFINITIONS

A. Competent Person: One who is capable of identifying existing and predictable hazards in working environment, as well as working conditions which are hazardous to personnel, and who has authorization by Contractor to take prompt corrective measures to eliminate hazards.

B. Construction Accident Prevention Plan (CAPP): See Attachment "A" at end of section.

C. Designated Authority: The senior person in charge or his appointed representative for the Project, as designated by/A/FBO. Unless otherwise indicated, this refers to on-site Project Director for A/FBO, and is identified as such in these specifications.

D. Hazard: Potential interaction between people, equipment, material, or environment which could result in damage to property or equipment, disruption of mission, contamination of environment, or substantial time loss or injury to people.

1. Activity Hazard Analysis: A documented process whereby procedures required to accomplish a work activity are outlined, actual or potential hazards of each step are identified.

2. Job Hazard Analysis: A documented process whereby duties or tasks of an employee's job are outlined, actual or potential hazards of each duty are identified, and measures for elimination or control of those hazards are developed.

E. Qualified Person: One who by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated ability to solve or resolve problems related to subject matter, the work, or the project.

1.5 SUBMITTALS

A. Construction Accident Prevention Plan (CAPP): Promptly upon receipt of Notice to Proceed, and before beginning work at Project Site or moving onto Project Site, submit to Project Director for approval a detailed CAPP indicating means which will be provided to ensure: safe access to work areas, protection/safety/health of persons authorized to be at Project Site, and protection of property on and adjacent to Project Site during all phases of construction. Include certified statement executed by Contractor's representative having broad corporate authority indicating full commitment to approved CAPP, and level of authority in assignment of responsibilities for implementation. Include specific details for meetings, inspections, and training/instruction of Contractor, subcontractor, and separate contractor employees. Provide the following:

1. Indemnification statement in accordance with CC&C:

2. Resume of safety and Health Program Manager for approval by Project Director.

3. Emergency Plans: Plans to ensure safety of all persons at Project Site in event of fire or other emergency, and review with all effected employees. Emergency plans shall be tested quarterly using drills to ascertain and ensure their effectiveness.

a. Plans shall include: Escape procedures and routes, method of accounting for employees following emergency evacuation, identification of source and location for rescue and medical assistance, means of reporting emergencies, and persons to be contacted for information or clarification.

b. Planning for Project shall include total system response capabilities to minimize consequences of accidents, natural disasters, or other emergencies.

c. On-site emergency planning shall be integrated with off-site emergency support.

d. The number of persons permitted in any location shall be limited to rescue and escape capability, as determined by Contractor, and in concurrence with Project Director.

4. Emergency alert systems shall be developed and tested to alert all persons likely to be affected by existing or imminent disaster conditions, and to alert and summon personnel and equipment comprising emergency response capability.

5. As determined by Project Director, provide listing of telephone numbers and location of ambulance, physician, hospital, fire, police, and other sources of emergency assistance; conspicuously post in several locations on Project Site. If telephone is not available, identify other methods and procedures.

B. Activity and Job Hazard Analysis: Prior to proceeding with performance of work involving unusual construction operations, work practices, or work involving hazardous materials, prepare and submit written analysis to Project Director. Develop methods and procedures to reduce identified hazards to greatest extent possible. Do not proceed with work which has been identified as being potentially hazardous until Project Director has expressed and recorded "no objection" to proposed methods and procedures.

C. Hazardous Materials: The Contractor shall bring to immediate attention of Project Director any material suspected of being hazardous (e.g., suspected asbestos) which is encountered during execution of the work. A determination will be made by Project Director as to whether to have tests performed to as certain whether the material is hazardous, do not proceed with that part of the work until directed by Project Director.

D. Hazardous Work Permits: Contractors and subcontractors, when required, shall submit written requests to Project Director for all Hazardous Works Permits. Permits are required whenever construction operations include use of the following:

1. Hot Work: Includes all work that results in open flame such as welding, cutting, brazing, and burning. The Contractor shall provide effective fire protection and prevention at all times during such operations.

2. Explosive Actuated Tools: These include powder charger tools made by Remington, Ram Set, and other manufacturers, and used for fastening purposes.

E. Material Safety Data Sheets (MSDS): Refer to requirements of CC&C and of COE EM 385-1-1.

F. Temporary Wiring and Lighting: Submit sketch of proposed temporary power distribution systems to Project Director. Do not install temporary power until approval is obtained. The sketch shall indicate location, voltages, and means of protection of all circuits (including receptacles, disconnecting means grounding, ground fault circuit interrupters, and lighting circuits).

G. Accident Investigation and Reporting: In connection with daily progress reporting. Investigate and submit separate accident report on each accident resulting in lost time, disabling/fatal injuries, or damage of substance to vehicles, property, materials, supplies, or to furniture,

fixtures, and equipment. Prepare reports on forms supplied by and in accordance with instructions of Project Director. Include in each report Contractor's recommendations and statement of actions taken to prevent recurrence of accident. Submit report of each accident with 24 hours of accident or mishap, except as otherwise indicated by requirements or governing regulations.

1. Except as may be otherwise requested by Project Director during time of Construction Contract, report major accidents and mishaps on Form (3-92) DS-1663 and related instruction sheet available from Project Director.

H. Time of Submittals: Provide required safety related submittals in accordance with provisions of CC&C. Project Director may recommended additional withholding from Contractor's progress payment requests when submittals are either not received on time or are not in acceptable condition for approval processing.

I. Corrective Action: In accordance with provisions of CC&C, Project Director may take corrective action, including stopping work due to non-compliance by Contractor with safety and health requirements.

1.6 QUALITY ASSURANCE

A. Management/Corporate Commitment: Provide introductory policy statement signed by a senior officer construction contracting firm/corporation stating that implementation and management of approved CAPP has full cooperation and support of management at the broad, corporate level.

B. Safety and Health Rules: Establish clearly written, definitive rules to be followed by employees of Contractor, subcontractors, and separate contractors at Project Site, and for enforcement thereof, applicable for performance of each unit of work. Prominently post notice stating that failure to comply with safety and health rules may cause immediate termination of employee. Post safety and health rules at Project Site and provide copy to each subcontractor prior to starting work at Project Site.

C. General orientations: Provide orientations on safety and health policies and rules for all new hires, including subcontractor personnel.

D. Specific Training:

1. Provide specific training to Contractor and subcontractor supervisory personnel and all craft workers in proper use and care of specific personal protective clothing, gear, and equipment.

2. Contractor and subcontractor employees shall be trained and supervised by qualified persons to perform, safety and confidently, recognized hazardous work operations and work in hazardous conditions to which they have been assigned.

E. Safety and Health Program Manager (SHPM):

1. Appoint an SHPM whose duties shall include effective implementation, coordination, and enforcement of CAPP at project Site. Provide SHPM for duration of Contract. Notices posted at Project Site shall name the SHPM and describe their authority.

2. Qualification: The SHPM shall be a qualified, experienced construction industry professional having ability and authority to manage CAPP, and shall be approved by Project Director. The SHPM shall be qualified to anticipate, identify. Evaluate, and implement corrective action in relation to potential safety and health hazards and dangerous exposures.

F. Safety and Health Committee: Establish a continuous and functional ongoing Safety and Health Committee at Project Site to include management or supervisory personnel of Contractor, subcontractors, and separate contractors. The Safety and Health Committee shall meet with SHPM and Project Director at regularly scheduled times and at other times as determined by Project Director. The committee shall:

1. Coordinate safety and health activities for effective protection.

2. Determine implementation of new safety and health measures related to forthcoming construction activities.

3. Anticipate and analyze hazardous conditions, and implement safe and healthily solutions.

4. Record essence of each meeting, and submit to Project Director.

G. Inspections:

1. The CAPP shall provide for frequent safety, health, and housekeeping inspections conducted by competent persons of Project Site, temporary structures, fabrication shops, material, machinery and equipment. Safety, health, and housekeeping inspections shall be recorded, including timetable for correcting deficiencies by competent persons.

2. Quality Control (QC) personnel, as part of their QC responsibilities, shall conduct and document daily safety, health, and housekeeping inspections.

3. Identify and record daily inspections performed on safety and health issues and deficiencies, as well as actions, timetables, and responsibilities for correcting deficiencies.

H. Tool Box Meetings: Hold "tool box" safety meetings once each week. Require attendance by all tradespersons, laborers, foremen, and supervisors at Project Site; include those of separate contractors. Discuss current construction operations and hazard analyses. Record essence of each meeting and submit to Project Director Within five working days of meeting’s end.

1.7 TOOLS, EQUIPMENT, AND MACHINERY

A. Quality: Hand tools, power tools, equipment, machinery, materials, and personal protective apparatus shall be of manufacture listed by U.S. or internationally recognized testing laboratory for specific application for which they are to be used. They shall be quality products recognized for professional construction use, applications, and work practices.

B. Safe Clearance Procedure: Prior to initial use, and periodically thereafter at times of continued use, provide inspections of construction tools, equipment, and machinery. Do not permit continued use tools, equipment, and machinery which are not in good condition; immediately upon identification of damage or malfunction, tag and remove from Project Site. Do not allow return of items until repaired and reprocessed in compliance with industry practice.

C. Qualified Persons. Engage qualified persons to make such inspections and prepare written records, including recommendations for corrections of defects and misapplication.

1.8 PROJECT CONDITIONS

A. General: Continue management and implementations of safety and health program through time of construction. Comply with conditions existing and developing at Project Site, and with requests of Project Director. Approval by Project Director will not relieve Contractor of overall responsibility for compliance with safety and health requirements of the Contract. Project Director reserves the right to suspend work when and where Contractor’s safety and health program is considered to be operating in an inadequate or non complying manner, including failures to complete required submittals within specified time requirements.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

ATTACHMENT "A" FOR SECTION 01533

GUIDELINES FOR PREPARATION OF
CONSTRUCTION ACCIDENT PREVENTION PLAN

Construction Accident Prevention Plan (CAPP) is, in essence, a safety and health policy and program management document. The CAPP shall be job-specific, and shall address unusual or unique aspects of the Project. The CAPP is based upon COE EM 385-1-1, where it is referred to as "Accident Prevention Plan (APP)".

The following areas are typically addressed in the CAPP:

1. Statement of safety and health policy.
2. Administrative responsibilities for implementing the plan, and identification and accountability of personnel responsible for accident prevention.
3. Means for coordinating and controlling work activities for contractors, subcontractors, and suppliers in effecting requirements of the CAPP:
4. Plans for safety and health indoctrination, hazard communication, and continued safety and health training.

5. Provisions for frequent safety and health inspections of work sites, materials, and equipment to ensure compliance with CAPP plan and COE EM385-1-1. Provide means for maintaining records of inspection reports, of identified safety and health deficiencies, as well as of measures, timetable, and individuals responsible for their correction. Provide procedures for follow-up inspections to ensure correction of deficiencies.
6. Responsibilities for investigating and reporting accidents, for reporting exposure, and for maintaining accident and exposure data, reports and logs.
7. Emergency response capabilities to minimize consequences of accidents or natural disaster.
8. Contingency plans for severe weather (e.g., windstorms, flooding, tornadoes, marine storms).
9. Plans for maintaining job cleanup and safe access.
10. Public safety requirements (e.g., fencing and signs).
11. Local requirements where applicable.
12. Prevention of alcohol and drug abuse on the Project.

END OF SECTION 01533

SECTION 01633 - PRODUCTS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Other general provisions of Construction Contract, including Contract Clauses and Conditions (CC&C); Supplemental Contract Clauses and Conditions, and other Division 1 sections of these Contract Specifications, apply to requirements of this Section.

1. Refer to Section 01011, "Summary of work" for listing of Government-furnished materials and equipment (GFM, GFE), and refer to separate contracts of Project which may require coordination of product selections by Contractor. See Article 5, "Government's Responsibilities" of CC&C.

2. Refer to Section 01091, "Definitions and Standards" for manner in which selected products for Project must comply with indicated standards; those compliances apply equally to approved substitutions.

3. Refer to Section 01301, "Submittals" for requirements on submittal procedures related to selection of products and making of substitutions for work of this Project.

1.2 SUMMARY AND DEFINITIONS

A. General: This Section specifies administration and procedures to be followed by Contractor in selecting products and in obtaining approval of proposed substitutions subsequent to execution of the Construction Contract. Comply with general requirements for delivery/storage/handling of products, except to extent otherwise indicated in sections of Divisions 2 through 16, and elsewhere in the Contract Documents. Comply with general requirements specified herein for materials, equipment, products, and other physical elements of the work.

B. Definitions: Refer to CC&C for definitions of terminology, and to Section 01091, "Definitions and Standards". The following definitions supplement those documents:

1. "Product" is defined to include purchased item for incorporation in the work, regardless of whether produced specifically for Project or taken from stock, and to include "material", "equipment", "system", and similar terms designating such usage.

2. "Material" is often used to indicate naturally-occurring or manufactured product which has been substantially cut, shaped, worked, mixed, processed, finished, refined, or otherwise fabricated/installed to form part of the work of this Project.

3. "Equipment" is often used to indicate product with operational parts, whether manually or automatically operated, or whether connected by piping, wires, or similar services.

4. "Substitution" includes Contractor-requested change in use of products/methods which has been identified as acceptable in Contract Documents. Changes requested by Government or by governing authorities are not substitutions.

1.3 QUALITY ASSURANCE

A. Source Limitation: To greatest extent possible, provide each generic kind of product from single source. Where no single source can supply entire required quantity of product, review options for procurement of product with Project Director. Project Director will advise of Government's preference in Contractor's procurement of portions from two or more sources. Follow approval procedures hereof for substitutions where combined sources are unable to fulfill the quantities required; used products which comply with requirements.

B. Compatibility of Products: Compatibility in relation to interfacing work is basic requirement of each product selection. Where product options are open for Contractor's selection, that selection must be compatible with interfacing products. Where products interface, coordinate selections for compatibility prior to procurement of any of these products, and without regard for sequence of each product's installation. Advise Project Director of compatibility problems which cannot be reconciled. Product non-compatibility which results from Contractor's incorrect selection from options is not an allowable basis for change order or Contract Modification. Coordinate selections, through Project Director, with products already selected and procured under separate contracts or by Government, request information on such products.

1.4 DELIVERY, STORAGE, AND HANDLING

A. General: Except as otherwise indicated, deliver, store, and handle products in accordance with manufacturer´s/ fabricator´s instructions and recommendations. Use methods which protect products from damage, deterioration, and loss (including theft). Control delivery schedules, and coordinate with installation schedules to minimize storage times at Project Site. Give particular attention to valuable, flammable, hazardous, sensitive, voluminous, or otherwise difficult to store/protect items. Refer to CC&C for requirements on transporting and importing of products to Project Site. Upon arrival of products, including Government´-furnished items (GFM,GFE), inspect for condition and compliance with requirements, and prepare inventory of stored items.

1. Package products in sealed containers where possible. Package components of products together, except as indicated otherwise. Label packages with highly visible instructions and precautions in regards to proper delivery, storage, and handling. Store for ease of continued inventory control.

2. Store, and place heavy products in a manner which will not overload or otherwise endanger substrate structure and supporting construction. Where practical, palletize heavy materials for handling by fork-lift truck.

3. Where necessary to prevent damage or deterioration of sensitive products from exposures during delivery, storage, and handling, protect from weather and other exposures, and provide environmental conditioning.

1.5 WARRANTIES

A. General: In addition to general warranty of Contract work as required by Article 12.2, "Warranties and Guarantees" of CC&C, and as applicable to warranty provisions specified

elsewhere in Construction Contract Documents, submit properly executed documentation in fulfillment of the following types of warranties; refer to specific provisions of Sections in Division 2 through 16 of these Contract Specifications:

1. "Special Warranty" is defined as specific limited warranty to achieve specified performance results and durability on portion of the work involving several products and substantial installation workmanship (e.g.," Flashing Warranty"). Special Warranties may require direct line of responsibility from principal material/product manufacturers and from designated installers/subcontractors to Government, in addition to Contractor's continuing responsibilities. From and content of special warranties is subject to acceptance by Project Director.

2. "Special Product Warranty" is defined as Project-specific limited warranty on product or prefabricated element of the work. Special product warranties require manufacturer's or prefabricator's executed acknowledgment of specific Project use and performance requirements, and acceptance of direct responsibility to Government for fulfillment of warranty provisions. Form, content, and Contractor's submittal of special product warranties are subject to acceptance by Project Director.

3. "Standard Product Warranty" is defined as available published warranty (usually preprinted) , without specific reference to use of product on Project, relating to qualities of product which enable it to perform as specified or implied for Project. Where specified, submit manufacturer´s/ fabricator´s executed endorsement acknowledging applicability of warranty for indicated use of product in work of Project.

    a. Where product manufacturer's standard published warranty does not comply with warranty requirements, and is not acceptable to Project Director, prepare, execute, and submit Special Product Warranty.

B. Disclaimer Limitations: Manufacturer's disclaimers in published product warranties do not relieve Contractor, including producers, fabricators, installers, and subcontractors of specified contract requirements on related product or work.

PART 2 - PRODUCTS

2.1 PRODUCTS SELECTIONS

A. General: Provide products which are complete with accessories, finishes, trim, devices, features, anchorages, connectors, protectors, safety elements, controls, adjusters, adapters, and similar components as applicable to form complete installation. Where available, provide standard products which have been previously produced and successfully used in similar applications; demonstrate/document to satisfaction of Project Director where required in individual technical specification sections.

B. Environmental Factors: Where cost-effective and consistent with functional requirements, Contractor should consider use of products and construction methods which reduce impact of Project on environment. The following factors should be considered:

1. Environmentally Preferable Products/Services: Use of products and services that have lesser or reduced effect on human health and environment when compared with competing products or services that serve same purpose.

2. Recyclability: Use of products/materials with ability to be recovered from, or otherwise divested from, solid waste stream for purpose of recycling.

3. Waste prevention: Change in design, manufacturing, purchase, or use of materials or products to reduce their amount or toxicity before they become solid waste.

C. Selection Procedures, Definitions: Comply with CC&C, including Article 11 "Materials and Equipment" requirements, on directed procurement of proprietary products. Except for directed procurement requirements specified in Contract Documents or directed by Government subsequent to execution of the Contract Drawings, governing regulations, and other contract requirements. Comply with one more of the following, as applicable:

1. Nonproprietary Products Requirements: Where specifications name products or manufacturers which are available and may be incorporated into the work, and which represent examples of acceptable performances on nonproprietary basis, select one of named products or equivalent product which complies with contract requirements and is acceptable to Project Director; document compliances through submittals.

2. Generic Descriptive/Prescribe Requirements: Where specifications describe/prescribe product requirements generically, without naming examples of acceptable products and manufacturers, select products to comply with contract requirements; document compliances through submittals.

3. Compliance with Standards: Where specifications require products which comply (including certified compliance) with specified industry standards, including codes and regulations, select products which satisfy requirements; document compliances through submittals.

4. Performance Requirements: Where specifications require products to fulfill performance requirements, provide products which have been tested, and certified where required, to assure fulfillment of requirements. Provide products which are recommended by manufacturer for required application; document fulfillments and recommendations through submittals.

5. Visual Matching/Selection: Where product selection, in addition to compliance with other requirements for selection, requires Government’s acceptance of either: 1) a match with existing work/established sample, or 2) a specific selection of color, pattern, texture, and/or kind, obtain Project Director’s approved Government selection through submittals of actual product samples showing color, pattern, texture, and kind. Where applicable, preliminary acceptance may be obtained through product data submittal, followed by actual sample submittal for confirmation of selection.

6. Where visual acceptance from among submitted products of one manufacturer is not obtained, submit products of other manufacturers. Where no products are available which are both visually acceptable to Project Director and in compliance with other applicable requirements, follow Project Director's instructions for the processing of substitution.

D. Continued Availability: Where standard products are available to fulfill specified requirements, and where these are of such nature that subsequent replacements or requirements for parts during normal life of Project can be expected, provide products with reasonable likelihood of continued availability as evidenced by manufacturer's production history, current financial stability, and published assurances that products/parts will be available for extended period.

2.2 PRODUCT REQUIREMENTS, GENERAL

A. Labels and Nameplates: Where appropriate and useful to Government, and where required by Project Director, provide permanent product labels and nameplates, including certified compliance stamps and similar required product markings. Locate labels and nameplates in accessible place which is not readily visible to general occupants of the building from exterior or interior. Except as otherwise indicated, limit size of plates and printing for ease of reading from distance of 350 mm.

1. Except for required safety/emergency signage, do not provide permanently-attached labels, nameplates, trade names, trademarks, and similar markings on product surfaces exposed to view by general occupants of Project. Comply with Project Director's requests for removal of no required markings, and for removal/replacement or refinishing of products disfigured by such markings.

B. Equipment Data plates: Provide permanent information plate on each item of operating equipment which is connected with services., has operating parts, or is likely to require servicing, parts replacements, control, testing, or similar care and maintenance. Locate inconspicuously, but allow for ease of operating/maintenance/replacement procedures. Provide appropriate information on data plate in each case, including the following minimum data as applicable:

1. Name of manufacturer and product
2. Date of manufacture and installation.
3. Model designation and serial number.
4. Capacity, speed, service rating, weight, and similar operational data

2.3 SUBSTITUTIONS

A. Specific references: Article 11.2, "Materials and Equipment" of CC&C specifies general conditions applicable to making of substitutions for products required by provisions of Contract Documents, as does Article 13, "Changes and Equitable Adjustments".

B. Conditions for Requesting Substitutions: Contractor's request for marking each substitution will be considered by Project Director when: 1) Extensive revisions of Contract Documents are not required, 2) Changes proposed are in general harmony with intent of Contract Documents, 3) Submitted data with request is timely, fully documented, and properly submitted, and 4) One or more of the following conditions exists as justification for substitution as judged by Project Director, otherwise, request will be returned "Without Action", except for brief statement of reason for returning:

1. Condition "A": Specified product(s) construction method(s) cannot be provided within Contract Time, where difficulty is not due to Contractor's failure-to-perform properly and on time.

2. Condition "B": Substantial net advantage is provided to Government in terms of cost, time, quality, performance, or similar consideration of value, and after deducting offsetting additional responsibilities Government may bear. Costs may include life-cycle cost comparisons in justification.

3. Condition "C": Specified product(s) or method(s) cannot be provided in manner which is compatible or coordinated with other elements of the work, including work by separate contractors or Government, where difficulty is not due to Contractor's failure-to-perform properly and on time.

4. Condition "D": Required warranty cannot be obtained for specified product(s) or method(s), and can be obtained for proposed substitution.

5. Condition "E": Proposed substitution is in direct response to an "or equal", or similar provision for named products, which are acceptable within Contract Specification provisions.

2.4 SUBSTITUTION PROCEDURES

A. General: Except as otherwise indicated, normal procedures for submitting product data, shop drawings, and samples is not sufficient means for obtaining Government's acceptance of Contractor-proposed substitutions. Where feasible, coordinate substitution acceptance requests with submittals on products directly involved in the substitution, and on products/work interfacing with proposed substitutions, including submittals by others on work by separate contractors or by Government. Coordinate timing through Project Director, who will determine whether timing of each request is acceptable. Comply with applicable provisions of Section 01301, "Submittals" for submittals in connection with requested approval of substitutions.

1. Initial Request: Identify specified product/method to be replaced by proposed substitution; include specification section and drawing numbers to locate where work is detailed. Submit sufficient comparable documentation on substitution to show compliance with technical requirements and compliance with substitution requirements hereof. Include the following, as applicable to each substitution request:

a. Complete product data; include comparable product data on specified product/method.

b. Shop drawings; where not applicable to Project Director's consideration of proposed substitution, shop drawings may be delayed until acceptance has been granted.

c. Samples, including range samples for selection by Government of color, pattern, texture, and kind.

d. Cost information, including net amount proposed for change to Contract Price and life-cycle cost comparisons.

e. Net effect of substitution on Contract Time.

f. Coordination/interface/compatibility statement; summarize problems / benefits which can be foreseen for use of proposed substitution in comparison with specified product/method use.

g. General quality assurance statement detailing qualities of proposed substitution in comparison with specified product/method, and covering considerations such as size, weight, durability, performance, compliances, continued availability, available warranties, visual effect, and required maintenance.

h. Contractor's certification to the effect that "Proposed substitution will result in work which is equal to or better than specified work it replaces, and that it will perform adequately in the application indicated". Include Contractor's waiver of rights to additional payment or time.

i. "Balance of Payments" certificate for substitution, or identification as non-U.S.-end-or-source product; refer to Article 11, "Materials and Equipment" of CC&C.

2. Government's Response: Within 14 days of Project Director's receipt of each request for substitution, Project Director will either request additional information from Contractor or proceed with conclusion of review. Within 14 days of Project Director's receipt of such additional information from Contractor, or where no additional information is requested, within 21 days of original receipt of request. Project Director will notify Contractor of acceptance or rejection of requested substitution.

   a. Rejections will include statements of basic reasons for Project Director's decisions; these decisions will be final.

3. Contractor's Actions: Where acceptance of a substitution has been received, proceed as specified for work, including for that substitution. Where rejection of a substitution has been

4. received, proceed as originally specified unless Project Director permits a second substitution acceptance request for that element of work.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01633

SECTION 01701M - COMPLETION AND CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Other general provisions of Construction Contract, including Contract Clauses and Conditions (CC&C);, and other Division 1 sections of these Contract Specifications, apply to requirements of this Section.

1. Refer to de first sections in Divisions 15 and 16 hereof, for additional closeout requirements applicable to mechanical and electrical work.

2. Refer to individual technical specification sections of Division 2 through 16 hereof, for unique completion and closeout requirements for each unit of work.

1.2 SUMMARY AND DEFINITIONS

A. The requirements of this section relate, primarily, to administration and procedures for the following:

1. Achieving "Substantial Completion".
2. Achieving "Final Acceptance"
3. Record documents and final submittals.
4. Closeout and turnover; operator instructions.
5. Final Cleaning; withdrawing from Project Site.

B. Definitions: Refer to Contract Clauses and Conditions for definitions of "substantial completion", "final completion", "final acceptance", ""warranty", "guarantee", and related terms; which refer to obligations and procedures for completion and closeout of Project.

1.3 SUBSTANTIAL COMPLETION PROCEDURES

A. General: Before or concurrently with request to Project Director for inspection and Certification of Substantial Completion, either on the entire work of the Contractor or each defined portion thereof, complete the following related to that part of the work.

1. In the Progress Payment Request, which coincides with or fallows the date claimed for Substantial Completion, either show "100 percent complete" or list non-substantial items of work which remain incomplete, along with description of reasons for being incomplete and value of such incomplete items, include copies of supporting documentation.

2. Submit statement showing sequence and accounting of authorized changes to Contract Price for (portion of) work being claimed as substantially complete.

3. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, certifications, and similar documents relating to continuing obligations.

4. Obtain and submit releases, enabling Government's fool-and unrestricted use of the work and access to services and utilities, including occupancy permits, operating certificates, and similar documents.

5. Submit record drawings, as-built drawing, maintenance/operating manuals, final surveys, and similar final and record information as required.

6. Deliver operating/maintenance tools, surplus Government-furnished materials, spare parts, required extra stock of materials (attic stock), keys to locks, and similar required physical items; in the manner requested by Project Director.

7. Make final change-over from temporary facilities/services to permanent, including lock cylinders and similar items. Advise everyone at project Site of precise time for each change-over; comply with Project Director's requests on timing of security-related change-over.

8. Complete start-up testing of systems, and instruction of Government´s operating and maintenence personnel.

9. Remove temporary facilities, construction tools and equipment, mock-ups, rejected materials, and similar items of construction not incorporated into permanent work; including surplus materials.

10. Make physical adjustements, correct minor defects, touch-up finishes, lubricate operating parts, and clean equipment and surfaces as required for use, occupancy, and operation.

B. Project Director will respond to each request by Contractor for certification of Substantial Completion, either by promptly providing a statement of known deficiencies in the work, or by proceeding with requested initial inspection of that part of the work.

1. Following inspection (s), Project Director will submit to Contractor a listing (if any) of substantial incompletions and deficiencies, which must be completed/ corrected prior by proceeding with requested initial inspection of that part of the work.

    a. After making completions and corrections in response to Project Director´s inspection(s), requested reinspection by Project Director.

2. When initially required completions and corrections have been satisfactorily made, Project Director will prepare and issue the requested Certification of Substantial Completion, listing remaining non-substantial deficiencies/defects, which must be completed/corrected prior to Final Acceptance.

    a. Those remaining deficiencies and defects will be included in the initial "punch list" (Schedule of Defects) for correction prior to Final Acceptance.

1.4 PROCEDURES FOR FINAL ACCEPTANCE

A. General: Notify Project Director at least 15 days in advance of time entire work of Contract will be ready for final inspection and tests by Government. Government will proceed, without delay, with preliminary inspection and tests, in order to notify Contractor promptly whether any there are portions of work may be separately considered for a delay in final acceptance, beyond initial final acceptance of other portions of work. Complete the following before requesting Government's final inspection and testing of the work; including completion of those "non-substantial" items excluded from Project Director's certifications of Substantial Completion (the "Schedule of Defects" or "Punch List"):

1. Final Payment Request, including copies of supporting documentation not previously submitted-and-accepted.

2. Updated final statement, showing extended sequence and accounting of final changes to Contract Price being claimed.

3. Final certificates of insurance, for products and completed operations, where required.

4. Copy of project Director's Schedule of Defects, or Punch List, bearing Contractor's certified statement of completion/correction for itemized work thereon, and endorsed by Project Director to show acceptance of Contractor statement.

5. Final meter-reading/services-dates for completion of utilities and services paid for by Contractor, and, where applicable, the beginning reading/time for utilities and services to be paid for by Government. Include similar cut-off points, measurements, and readings for stored fuels and other consumable products and services.

6. Statement of "consent of surety", where applicable to Project.

7. Statement, acceptable to Project Director, on settlement of liquidated damages.

B. Reinspection and Acceptance: Upon receipt of Contractor's request for final inspection and acceptance, including statement that foregoing requirements have been fulfilled, Project Director will proceeded with reinspection and testing of the work. Include in statement, a listing of items known to be incomplete, along with explanation of why such items are incomplete, and Project Director's endorsement indicating recognition of circumstances leading to such incompletions.

1. Following final reinspection. Project Director will advise Contractor of incomplete work and unfulfilled obligations. If any, which are required for final acceptance, including requirements for testing/retesting, if any.

   a. Upon completion of requested work, obligations, tests and similar final actions as required by Project Director´s reinspection, request Project Director´s partial reinspection (limited scope of such final actions).

2. Upon Contractor´s satisfactory fulfillment of required completions / corrections, Project Director will prepare and issue a Certificate of Final Acceptance; listing exceptions, if any, of work yet to be accepted. Contracting Officer will notify Contractor of final acceptance. Process exceptions, similarly at appropriate items.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Comply with general requirements of Section 01301M "Scheduling and Submittals", for the preparation and processing of final-and-record document submittals, as may be applicable and as requested by Project Director. Refer to individual section of Division 2 through 16 of these specifications for specific record submittal requirements on individual units of work. Develop and maintain an original mark-up set of contract documents and submittals, as required for final/record document submittals, at Project Site and available for project Director's reference; however, project from deterioration and loss, and retain in a secure and fire-resistant space; do not use for construction purposes. Mark up changes and additional information developed during construction, as may be of future interest/value to submittal copy may be most capable of showing the change or other data most clearly. Where applicable, show each change as part of a related Contract Modification, by change order number. At time of Substantial Completion, submit the following final/record documents, marked up to represent "As-Built" documentation; to the Project Director, and in the form and manner requested:

1. Record Contract Drawings: Maintain a full set of Government's latest revised issue of each drawing sheet, blue-line or black line print; marked up using different colors of pencils or pens., to differentiate between change order numbers. Concentrate upon hidden dimensions and similar data which would be difficult to obtain at a later date. Show conditions not clearly detailed by shop drawings or coordination drawings; and show cross-references to such other records of final data. Organize marked-up prints into set(s) as originally released, mark each set for identification and date of release as record copy (Substantial Completion date) , and transmit to Project Director. Using these record prints, redraft on mylar a final comprehensive set of drawings incorporating all the information maintained on the record prints as approved by the project director. Auto Cad diskettes of the original drawings will be made available to the contractor for his use in accomplishing the above upon request.
2. Record Shop Drawings and Coordination Drawings: Maintain a full set of approved shop drawing blue-line/black-line prints; marked up using different colors of pencils or pens, to differentiate between change orders numbers. Show cross-reference where change has been marked up on another document or submittal. Organize shop drawings into sub-sets, as received from each fabricator, and identify by related Contract Specification section number; show date of release as record copy (Substantial Completion date), and transmit to Project Director.

    a. Prepare and transmit mark-up copies of coordination drawings, similarly to requirements for record shop drawings.

    b. Make final corrections to site survey, drawings showing buried utilities and similar drawings. Print and transmit to Project Director, similarly to requirements for record shop drawings

3. Record Contract Specification: Maintain a full set of Government's Contract Specifications; marked up to record minor changes in the printed ext and to show cross references to other documentation recording changes. Where additional writing space is needed, either insert extra sheets with such notations, or write on the blank back sides of preceding pages. Give particular attention to approved substitutions,

selection between options, and similar record information; and give priority to the recording of such data which cannot be easily discerned by subsequent observation at the Project. Mark each volume of specification set for identification and date of release as record copy (Substantial Completion date), and transmit to project Director.

4. Record Product data: Maintain a full set of approved product data submittals; marked up to show specific selections for products as actually supplied and installed. Where changes subsequent to approval have affected product selection, either obtain corrected product data sheets or mark up sheets to show changes. Show departures, if any, from manufacturer's instructions. Mark each submittal with related section number of Construction Specifications, bind in that sequence in conveniently sized binders, identify and date binders (Substantial Completion date), entitle "Replacement Products Procurement Manual", and transmit to Project Director.

    a. Include with each submittal of record product data, executed copies of final warranties, maintenance agreements, workmanship bonds, performance certifications, and similar required documentation of required assurances.

    b. Include with each submittal of record product data, final copies of related inspection and test reports, certificates of compliances (with requirements), and similar quality assurance documentation.

5. Record Samples and Mockups: Prior to time of Substantial Completion, meet with Project Director at Project Site, and determine which of remaining submitted samples and prepared mockups are required for Government's continued retention. Mark each element with appropriate identification and date of Substantial Completion; pack in appropriately identified cardboard containers, and deliver to designated storage space at Project Site, as requested by Project Director.

6. operating and Maintenance Manuals: Prepare manuals as required for units of work, as specified in Divisions 2 through 16 of these specifications. Place contents in heavy-duty 3-ring; vinyl-covered, 2-inch capacity binders, and include pockets for folded-up data. Provide full identification on both spine and front cover of each binder; include related Contract Specification number(s), and date of Substantial Completion. In general, and except as otherwise specified, include the following categories of information; detailed operating procedures, maintenance, and inspection procedures including turnaround cycles, safety and emergency instructions, parts listing and recommended spare parts inventory, wiring diagrams and flow charts, performance curves, applicable product data and shop drawings, and similar information.

    a. Bind each principal operational unit's manual in separate binder(s), and consolidate secondary-and-small related-equipment manuals in shared binders; except bind manuals containing classified data entirely separate from non-classified manuals, comply with Government's requirement for handling classified information.

    b. Except as otherwise indicated, provide 3 copies of each required operating-and-maintenance manual, and transmit to Project Director either prior to or at the time of Substantial Completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 COMPLETION AND CLOSEOUT

A. General Training Requirements: As specified, appropriate, and reasonably requested by Project Director, provide sessions for: 1) Demonstration of facilities to Government's property/ occupancy management personnel, 2) Operating orientation-and-training sessions for Government's operating personnel, including security system personnel, and 3) Maintenance instructions and demonstrations for Government's personnel and engaged services assigned to the continued maintenance of the entire facility including equipment, devices, surfaces/finishes/fixtures, and similar elements. Where appropriate, engage actual fabrication/installation personnel who performed the work to conduct the required sessions. As applicable in each session, review final/record information provided to Government on operating procedures, maintenance, cleaning, spare parts, extra materials (attic stock). Tools/devices, lubricants/fuels, signage, warnings, hazards, procedures for start-up/shut-down/sequencing of systems, emergency/safety procedures, economy/efficiency adjustments, energy conservation, protective features, warranties/maintenance agreements/performance bonds, and similar features of the completed Project.

1. Refer to individual sections of Contract Specifications in Division 2 through 16, for special requirements on transferring each unit to Government's occupancy, operation, and maintenance. In particular, refer to sections of Divisions 15 and 16 for requirements on mechanical and electrical systems.

B. Posted Instructions: Except as otherwise indicated, post operating and maintenance instructions at-and-for-each principal unit of operational equipment; including safety, security, protective equipment/system/devices. Post in both English and host country predominant language; and, for emergency-type postings, include international form of pictorial-graphic signage. Provide protected, tamper-resistant signage, of a permanent nature for the exposure conditions in each case. Comply with Project Director's requests. Locate for convenience of operating and maintenance personnel; but concealed from others, except in the case of general-usage and emergency facilities.

C. Turnover to Government: Comply with instructions of Contracting Officer and Project Director for procedures, sequence, timing, and similar considerations for the turning over of facilities to Government's personnel for operating, maintenance, occupancy, protection, and general care-on-custody.

3.2 FINAL CLEANUP

A. Initial Cleaning: Except as otherwise indicated, provide initial cleaning of each non-embedded unit of work promptly upon nominal completion-and-curing of its installation. Maintain in protected and/or sufficiently clean condition, through remainder of Construction Time, so as to prevent staining or other deleterious effect of soiling; promptly remove significant soiling, including graffiti deposits, occurring during Construction Time. Always comply with product manufacturer's instructions and recommendations, including limitations, for the cleaning of exposed surfaces and for the use of cleaning substances and devices.

B. Final Cleaning: Immediately prior to the time(s) of Project Director's inspection(s) of work for certification of Substantial Completion, repeat initial/interim cleaning operations as specified above. Use experienced cleaning personnel and proven methods and materials; so as to achieve the level of cleanliness normally expected for a U.S.A-located, first class, commercial or institutional building project. In addition to specific cleaning as may be required by related technical specification sections hereof, comply with the following as applicable:

1. Comply with governing regulations, including safety standards and environmental protection regulations; do not burn waste materials at Project Site. Dispose of waste materials in a lawful manner, and do not bury at Project Site, except as may be authorized by Project Director; dispose of surpluses as required by CC&C. Do not discharge volatile and other dangerous/deleterious fluids into drainage systems.

2. Remove temporary facilities and construction tools/equipment/devices; including temporary buildings, enclosures, and protective coverings. Comply with Project Director's requests. Restore substrates as required.

3. Clean Project Site, including landscape development areas and site improvements. Remove rubbish, debris, litter, unauthorized/unwanted plant growths (weeds), sweep paved areas to a broom-clean condition, and remove stains petro-chemical spills and similar deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

4. Remove debris and dust from limited-access spaces of Project; including , trenches, manholes and similar spaces.

5. Clean exterior exposed surfaces to a dirt-free condition, free of stains, graffiti, films, and other noticeable and deleterious substances. Restore reflective polishes, and applied treatments.

6. Wipe accessible surfaces clean on mechanical/electrical equipment, and similar equipment and fixtures, including lighting fixtures. Remove excess lubrications and similar substances.

7. Remove exposed-to-view labels, which are not required as permanent labels.

8. Clean transparent materials, including glazed panels, to a polished condition free of visible dirt and films; with sealants trimmed away neatly. Replace broken and noticeably-abraded glass/plastic units.

9. Inspect Project with project Director; and where required, engage specialized firm(s) to rid the Project of roaches and other pests of every description.

END OF SECTION 01701M

SECTION 02070 – PROTECTION AND SELECTIVE REMOVAL / DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Protection of existing building fabric, furnishings and landscape material to remain.
2. Salvage of all items indicated on the Drawings or in the Specifications to be removed and reused in the Work or returned to the Government.
3. Removal and disposal of all items indicated on the Drawings or in the Specifications to be removed and not indicated to be reused or returned to the Government and all items or construction that interfere with new construction.

B. Related work specified elsewhere:

1. Special protection requirements that are project specific are included in Section 1 “Summary of Work”.
2. Phasing requirements related to protection and selective removal/demolition are included in Section 01011 “Summary of Work”.

1.2 DEFINITIONS

A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged or to remain the Government’s property.

B. Remove and Salvage: Items indicated to be removed and salvaged remain the Government’s property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Government’s designated storage area.

C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same location or locations indicated.

D. Existing to Remain: Protect and maintain construction indicated to remain against damage and soiling during selective demolition. When permitted by the Project Director, items may be removed to a suitable, protected storage location during selective demolition and then, cleaned and reinstalled in their original locations.

1.3 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Government’s property, demolished materials shall become the Contractor’s property and shall be removed from the Site with further disposition at the Contractor’s option.

B. Historical Items indicated remain in the Government's Property: Careful remove and salvage each item in a manner to prevent damage and deliver promptly to the Government.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Division 1 "Submittals" Section.

B. Schedule of selective demolition activities indicating the following:

1. Interruption of utility service
2. Coordination for shutoff, capping and continuation of utility service
3. Detailed sequence of selective demolition and removal work to ensure uninterrupted progress of Government's on-site operations.
4. Coordination of Government's continuing occupancy of portions of existing building

C. Inventory of Items to be removed and salvaged.

1.5 QUALITY ASSURANCE

A. Regulatory requirements: Comply with governing notification regulations before starting selective demolition. Comply with hauling and disposal regulation of authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. Government will occupy portions of the building immediately adjacent to selective demolition area. Conduct selective demolition so that Government's operations will not be disrupted. Provide not less than 48 hours' notice to Government of activities that will affect Government's operations.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Government as far as practical.

B. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor might be removed from structure as work progresses. Transport salvaged items from site as they are removed.

1. Storage or sale of removed items located on project site will not be permitted.

C. Protection of persons: Provide temporary barricades and other forms of protections to protect Government's personnel and General Public from injury due to selective demolition work.

1. Provide protective measures as required to provide free and safe passage of Government's personnel and general public to occupied portions of building.
2. Erect temporary covered passageways as required by authorities having jurisdiction.
3. Constructs temporary insulated dustproof partition where required to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks.
4. Maintain traffic flow within project site, especially for access of emergency vehicles.

D. Protection of Existing Building: Take particular care to insure that existing materials, components, or fabric of the building to remain in place, to be reused, or to be stored are not damaged or deteriorated in any way by salvage, selective demolition and removal operations. All workmen shall accord the age and historic significance of the building, the same respect normally.

1. Protect existing work that is to remain in place, that is to be reused, or that is to remain the property of the Owner by temporary covers.
2. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
3. Protect floors with suitable coverings when necessary.
4. Provide interior and exterior shoring, bracing, and supports to prevent movements, settlements, or collapse of structures to be demolished and adjacent facilities to remain.
5. Do not overload structural elements.
6. Provide new supports and reinforcements for existing construction weakened by selective demolition or removal work.
7. Repair items damaged during performance of the work or replace with new to match at least condition prior to start of work.
8. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building. Where removal of existing construction, components and other items necessary to accomplish work, have materials and workmen ready to provide adequate and approved temporary covering of exposed areas. Temporary coverings shall be attended as necessary to insure effectiveness and to prevent displacement. Contractor shall repair or replace all elements damaged by failure to properly protect them from the weather to the satisfaction of the Project Director at no additional cost to the Government.
9. Remove protections at completion of work.

E. Damages: Promptly repair damaged caused to adjacent facilities by demolition work.

F. Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with roads, walks and other adjacent occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

G. Flame cutting: Do not use cutting torches for removal until work area is cleared of flammable materials. At concealed space such as interior of ducts and pipes spaces, verify conditions of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations.

H. Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.

1. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

2. Maintain fire protection services during selective demolition operations.

I. Environmental Controls: Use water sprinkling, temporary enclosures and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.

1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding and pollution.

1.7 SCHEDULLING

A. Arrange selective demolition schedule so as not to interfere with Government's on-site operations.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical or structural elements that conflict with the intend of function or design are encountered. Investigate and measure the nature and extend of the conflict. Promptly submit a written report to the Project Director.

E. Survey the condition of the building and retaining wall to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structure during selective demolition.

F. Perform surveys as the work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

A. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Do not interrupt the existing utility serving occupied or operating facilities, except when authorized in writing by Government or authorities having jurisdiction. Provide temporary service during interruptions to existing utilities, as acceptable to Government and to governing authorities.

    a. Provide not less than 72 hours' notice to Government if shutdown of service is required during changeover.

B. Utility Requirements: Locate, identify, disconnect and seal or cap off indicated utility services serving building to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies.
2. Where utility services are required to be removed, relocated or abandoned provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.
3. Cut off pipe or conduit or conduit passing through walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit after bypassing.

3.3 PREPARATION

A. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.

1. Erect temporary protection such as walks, fences, railings, and covered passageways, where required by authorities having jurisdiction.
2. Protect existing site improvements, appurtenances and landscaping to remain.
3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
4. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces to ensure that no water leakage or damage occurs to structures or interior areas. Equip opening protective with security locks if required.
5. Cover and protect furnishings and equipment that have not been removed.

B. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

3.4 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable condition, such as flooding and pollution.

B. Remove each items carefully. Wrap or otherwise protect it against damage or deterioration. Do not seal wood items. Allow air circulation.

C. Store salvaged items in approved location. Provide all necessary protection against damage and deterioration.

3.5 SALVAGE

A. Label in permanent but nondestructive manner each item to be salvaged. Identify space from which item was removed. Maintain documentation (inventory) of all stored items.

B. Remove each item carefully. Wrap or otherwise protect it against damage or deterioration. Do not seal wood item. Allow air circulation.

C. Store salvaged item in approved location. Provide all necessary protection against damage and deterioration.

3.6 REMOVALS

A. Remove all items without causing damage to any item to remain.

B. Title to Materials: Title to all materials to be removed and disposed of as approved by the Contracting Officer is vested in the Contractor upon the receipt of such approval. The Government will not be responsible for the condition of loss of, or damage to such property after such approval. Materials shall not be viewed by prospective purchasers or sold on the site.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Prompt dispose of demolished materials. Do not allow demolished materials to accumulate on-site. Items to be removed and stored at the direction of the Government are indicated on the Drawings.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Government’s property and legally dispose of them.

3.8 CLEAN-UP AND REPAIR

A. Upon completion of salvage, selective and removal work, remove tool, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.

B. Repair selective demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction of surfaces soiled or damaged by selective demolition work.

END OF SECTION 02070

SECTION 02110 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Protection of existing trees indicated to remain.
2. Temporary removal of trees and other vegetation.
3. Topsoil stripping.
4. Removing above-grade improvements.
5. Removing below-grade improvements.

1.2 PROJECT CONDITIONS

A. Traffic: Conduct site-cleaning operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.

B. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place

1. Protect improvements on adjoining properties and on Government's property.
2. Restore damaged improvements to their original condition

C. Protection of Existing Trees and Vegetation: Project existing trees and other vegetation indicated to remain in place against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to be left standing.

1. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.
2. Provide protection for roots over 1-1/2 inch in diameter that are cut during construction operations. Coat cut faces with an emulsified asphalt or other acceptable coating formulated to use on damaged plant issues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.
3. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations in a manner acceptable to Project Director. Employ a licensed arborist to repair damage to trees and shrubs.
4. Replace trees that cannot be repaired and restored to full-growth status, as determined by arborist.

D. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Government's premises where indicated or directed.

PART 2 - PRODUCT (Not Applicable).

PART 3 - EXECUTION

3.1 SITE CLEARING

A. General: Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions, as required, to permit performance of work. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.

1. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.

B. Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 inches. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.

1. Strip topsoil to whatever depths encountered in a a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping.

    a. Where existing trees are indicated to remain, leave existing topsoil in a place within drip lines to prevent damage to root system.

2. Stockpile selected topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required to prevent win erosion.

3. Dispose of unsuitable or excess topsoil as specified for disposal of waste material.

C. Clearing and Grubbing: Clear site of trees, shrubs, and other vegetation, except for those indicated to be left standing.

1. Completely remove stumps, roots, and other debris protruding through ground surface.
2. Use only hand methods for grubbing inside drip line of trees indicated to remain.
3. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

    a. Place fill material in horizontal layers not exceeding 6 inches loose depth, and thoroughly compact each layer to a density equal to adjacent original ground.

D. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate performance of work.

1. Remove existing underground pipe or conduits as indicated on mechanical or electrical drawings (Division 15 and 16 Sections). Removing abandoned underground piping or conduits interfering with construction is included under this Section.

3.2 MATERIALS

A. Burning on Government's Property: Burning is nor permitted on Government's property.

B. Removal from Government's Property: Remove waste materials and unsuitable or excess topsoil from Government's property.

END OF SECTION 02110

SECTION 02200 - EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Preparing and grading subgrades for sidewalks, and landscaping.
2. Excavating and backfilling for utilities and structures.
3. Excavating and backfilling for underground mechanical and electrical utilities.

B. Related Sections: The following Sections contain requirements that relate to this Section.

1. Division 2 Section "Site Clearing" for site stripping, grubbing, topsoil removal, and tree protection.
2. Division 2 Section "Landscape Work" for finish grading, including placing and preparing topsoil for lawns and planting.

1.2 DEFINITIONS

A. Excavation consists of the removal of material encountered to subgrade elevations and partial reuse or disposal of materials removed.

B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.

D. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.

E. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Project Director. Unauthorized excavation, as well as remedial work directed by the Project Director, shall be at the Contractor’s expense.

F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.

G. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.3 SUBMITTALS

A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Section.

B. Product data for the following:

1. Each type of plastic warning tape.
2. Filter fabric.

C. Samples of the following:

1. 20-lb samples, sealed in air-tight containers, of each proposed fill and backfill soil material from on-site or borrow sources.
2. 12-by-12 inch sample of filter fabric.

D. Photographs of existing adjacent structures and site improvements.

1.4 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.

B. Testing and Inspection Service: Government will employ a qualified independent geotechnical engineering testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings".

1. Before commencing earthwork, meet with representatives of the governing authorities, Architect, Consultants, Geotechnical Engineer, Independent testing agency, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to conveying conference. Record discussions and agreements and furnish a copy to each participant.

1.5 PROJECT CONDITIONS

A. Site Information: Data in subsurface investigation reports included at the end of this section was used for the basis of the design and are provided to the Contractor for information only. Conditions are not intended as representations or warranties of accuracy or continuity between soil borings. The Governments will not be responsible for interpretations or conclusions drawn from this data by Contractor.

1. Additional test borings and other exploratory operations may be performed by Contractor, at the Contractor’s option; however, no change in the Contract sum will be authorized for such additional exploration.

B. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Government or others except when permitted in writing by the Project Director and then only after acceptable temporary utility services have been provided.

1. provide a minimum 48-hours´notice to the Project Director and receive written notice to proceed before interrupting any utility.

C. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.

B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GP; GW; GM; SW; SP; SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste. Frozen, materials, vegetation and other deleterious matter.

C. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC; SC; ML; MH; CL; CH; OL; OH; and PT.

D. Backfill and Fill Materials: Satisfactory soil materials.

E. Subbase and Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Subbase or base materials.

G. Bedding Material: Subbase or base materials with 100 percent passing a 25 mm sieve and not more than 5 percent passing a No. 8 sieve.

H. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate 25 mm to 4,75 mm, grading size 57, with 100 percent passing a 40 mm sieve and not more than 5 percent passing a No. 8 sieve.

I. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100 percent passing a 40 mm sieve and 0 to 5 percent passing a No. 50 sieve.

J. Impervious Fill: Clay, clay and sand mixture capable of compacting to a dense state.

2.2 ACCESORIES

A. Warning Tape: Acid-and-alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick.

1. Tape Colors: Provide tape colors to utilities as follows:

a. Red: Electric.
b. Yellow: Gas, oil, steam, and dangerous materials.
c. Orange: Telephone and other communications.
d. Blue: Water systems.
e. Green: Sewer systems.

B. Filter Fabric: Manufacturer's standard nonwoven needle punch pervious geotextile fabric of polypropylene, nylon or polyester fibers, or a combination.

1. Provide filter fabrics that meet or exceeded the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parentheses:

a. Grab Tensile Strength (ASTM D 4632): 45 kg.
b. Apparent Opening Size (ASTM D 4751): #50 to #100 U.S. Standard sieve.

PART 3 - EXECUTION

3.1 PREPARATION

A Protect structures, utilities, sidewalks, pavements, and other hazards created by earthwork operations.

B Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

D. Tree protection is specified in the Division 2 Section "Site Clearing".

3.2 DEWATERING

A. Prevent surface water and subsurface water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

3.3 EXCAVATION

A. Explosives: Do not use explosives.

B. Unclassified Excavation: Excavation is unclassified and includes excavation to required subgrade elevations regardless of the character of materials and obstructions encountered.

3.4 STABILITY OF EXCAVATIONS

A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within tolerance of plus or minus 30 mm. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Excavation for Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 30 mm. Do not disturb bottom of excavations intended for bearing surface.

3.6 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated slopes, lines, depths, and invert elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 300 mm higher than top of pipe or conduit, unless otherwise indicated.

1. Clearance: Minimum 200 mm and maximum 300 mm each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid point loading.

1. For pipes or conduit less than 150 mm, in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on bedding material as shown on the drawings.
2. For pipes and conduit 150 mm or larger in nominal diameter, shape bedding to support bottom 90 degrees of pipe circumference.

3.7 APPROVAL OF SUBGRADE

A. Notify Project Director when excavations have reached required subgrade.

B. When Project Director determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

1. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.

C Reconstruct subgrades damaged by freezing temperatures, rain, accumulated water, or construction activities, as directed by the Project Director.

3.8 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to the Project Director.

1. Fill unauthorized excavations under other construction as directed by the project Director.

B. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Project Director.

3.9 STORAGE OF SOIL MATERIAL

Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.

1. Stockpile soil materials away from excavations. Do not store within drip line of remaining trees.

3.10 BACKFILL

Backfill excavations promptly, but not before completing the following:

1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for record documents.
3. Testing, inspecting, and approval of underground utilities.
4. Concrete formwork removal.
5. Removal of trash and debris from excavation.
6. Removal of temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.11 UTILITY TRENCH BACKFILL

A. Place and compact bedding course on rock or concrete and other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for, joints, barrels of pipes and for joints, fittings, and bodies of conduits.

B. Concrete backfill trenches that carry below or pass under footings and that are excavated within 450 mm of footings. Place concrete to level of bottom of footings.

C. Place and compact initial backfill of satisfactory soil material or subbase material, free of particles larger than 25 mm, to a height of 300 mm over the utility pipe or conduit.

1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.

D. Coordinate backfilling with utilities testing.

E. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.

F. Place and compact final backfill of satisfactory soil material to final subgrade.

G. Install warning tape directly above utilities, 300 mm below finished grade, except 150 mm below subgrade under pavements and slabs.

3.12 FILL

A. Preparation: Remove vegetation, topsoil, debris, wet soil, obstructions, and deleterious materials from ground surface prior to placing fills.

1. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.

B. When subgrade or existing ground surface to receive fill has density less than that required for fill, break up ground surface to depth required by the Project Director, pulverize, moisture-condition or aerate soil and recompact to required density, or to the satisfaction of the Project Director.

C. Place fill material in layers to required elevations for each location listed below.

1. Under grass, use satisfactory excavated or borrow soil material.
2. Under walks use subbase or base material, or satisfactory excavated or borrow soil material.
3. Under steps and ramps, use subbase material.
4. Under building slabs, use drainage fill material.
5. Under footings and foundations, use engineered fill.

3.13 MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compactation to within 2 percent of optimum moisture content.

1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air-dry satisfactory soil material that is too et to compact to specified density.

a. Stockpile or spread and dry removed wet satisfactory soil material.

3.14 COMPACTION

A. Place backfill and fill materials in layers not more than 200 mm in loose depth for material compacted by heavy compaction equipment, and not more than 100 mm in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.

C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D 1447 or approved equivalent.

1. Under structures, steps and pavements, compact the top 300 mm below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.

2. Under walkways, compact the top 150 mm below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.

3. Under upper drainage system, compact the top 150 mm below the drainage pipe and each layer of backfill or fill material at 95 percent maximum dry density.

4. Main Trench: Compact the top soil 450 mm at footing level at 95 percent maximum dry density. Complete filling with high quality granular soil to warranty an adequate drainage of rain water.

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between existing adjacent grades and new grades.
2. Cut out spots, fill low spots, and trim high spots to conform to required surface tolerances.

B. Sire Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 30 mm.

2. Walks: Plus or minus 30 mm.

3. Pavements: Plus or minus 10 mm.

C. Grading Inside Building Lines: Finish subgrade to a tolerance of 10 mm when tested with a 3 M straightedge.

3.16 SUBBASE AND BASE COURSES

A. Under pavements an sidewalks, place subbase course material on prepared subgrades. Place base course material over subbases to pavements.

1. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections and thickness to not less than 95 percent of ASTM D 1557 maximum density, or approved equivalent.

2. Shape subbase and base to required crown elevations and cross-slope grades.

3. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.

4. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

3.17 DRAINAGE FILL

A. Upper drainage systems. Trenches shall be filled according to the following sequence:

1. Provide a 100 mm layer of crusted stones or pebble stone over the last compacted layer.

2. Install sieved pipes as indicated on drainings and fill with a new layer of pebble stones/crushed stones, thickness (according to the slope): variable; minimum 200 mm.

3. Install filter fabric, 100 % polyester, Bidim, width:> 400 mm, overlap: 200 mm over prepared subbase.

3.18 FIELD QUALITY CONTROL

A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.

1. Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), as applicable, or other approved methods.

a. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.

b. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Project Director.

2. Paved Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 600 sq. meters or less of paved area or building slab., but in no case fewer than three tests.

3. Wall Backfill: In each compacted backfill layer, perform at least one field in-place density test for each 30 M or less of wall length, but no fewer than two tests along a wall face.

4. Trench Backfill: In each compacted initial and final backfill layer, perform at least one field in-place density test for each 15 M or less of trench, but no fewer than two tests.

B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.

3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing and erosion. Keep free of trash and debris.

B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace material to depth directed by the Project Director; reshape and recompact at optimum moisture content to the required density.

C. Setting: Where setting occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and legally dispose of it off the Government’s property.

B. Disposal: Transport surplus satisfactory soil to designated storage areas on the Government’s property. Stockpile or spread soil as directed by Project Director.

1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Government’s property.

END OF SECTION 02200